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ABSTRACT

The step-by-step procedures contained in this manual are intended to develop a simple information system that can be used to collect and process the best possible factual data on the manpower needs of the community served by an educational institution, so that long-range planning of vocational curriculum and guidance can be based on what the jobs are and in what number. Methods and formats for obtaining and relating three types of information (skills needed by the local economy, skills produced by an institution, and student career aspirations) through mail and telephone surveys comprise three-quarters of the manual; appended are: the statistical procedure used to develop confidence intervals, formulas for calculating replacement rates and figures in projecting employment needs, a method of measuring the representation of survey responses, and an abbreviated Directory of Occupational Titles. Part II of the document is a model for a plan prepared at the local level based on the collected manpower information, illustrating "outcome oriented" planning, utilizing output, results, and benefits as a basis for determining the direction the institution should follow. (AJ)

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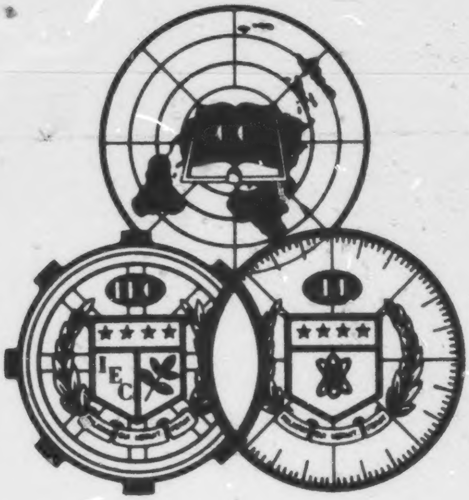
# MANPOWER INFORMATION MANUAL

## A MANUAL FOR LOCAL PLANNING



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Department of Community Colleges
State Board of Education
Raleigh, North Carolina
June, 1973

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# MANPOWER INFORMATION MANUAL

## A Manual for Local Planning

Prepared by

The Occupational Information Center
North Carolina Department of Community Colleges

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Vocational Education Amendments of 1968 (Public Law 90-576)
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# PREFACE

The statewide long-range plans[1] for the Community College System have resulted in the development of a plan for identifying the manpower education and training needs of the economy that should be met by the institutions of the system. The statewide long-range plans were designed to determine the contributions that should be made to North Carolina's people and economy by the Community College System's educational process, and it was not related to the educational process itself. The planning process is based on information pertaining to the needs of the labor market. The planning methodology is essentially an information process that will serve as a guide to decision makers at the state and local levels for providing people with the correct kind of education and training at the time it is needed by them.

No extensive data collection or survey efforts were undertaken during the statewide planning effort. Previously published data on the characteristics of population, labor force and economic activity were used. This data was adequate to develop the planning concept and to provide information on a statewide basis. The statewide planning effort validated the requirement for an institutional planning model that could be used by each institution in the preparation of its individual plans. A second contract with Research Triangle Institute initiated an institution planning effort[2] at

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[1] Planning for the North Carolina Community College System, Vols. II, III. Raleigh, N.C.: North Carolina Department of Community Colleges, 1970.

[2] Planning for Forsyth Technical Institute, Plans for 1970-80 Decade. Winston-Salem, N.C.: Forsyth Technical Institute, 1971.

Forsyth Technical Institute. The preparation of these plans has emphasized the vital requirement for the development of a system for the collection and processing of information on manpower education and training needs at the local level. This information is vital to the occupational education effort in both the secondary and post-secondary institutions. All available sources of information on manpower training needs have been utilized in the institutional planning effort,but reliable planning and education program management cannot be achieved until a simple and productive system for collecting and processing information at the local level is developed.

Many studies have been prepared on the need for manpower information to facilitate long-range planning, curriculum development, and counseling for vocational education. However, few studies address themselves to the complete effort required to develop an information system that can be used to collect and process the details needed for full guidance for vocational education. The procedures contained in this manual are intended to fill this recognized information gap.

# ACKNOWLEDGMENTS

Appreciation is expressed to the staff of Forsyth Technical Institute for their valuable cooperation throughout this research project. The entire staff has given generously of their time in making this project successful.

The community served by Forsyth Technical Institute--the counties of Forsyth, Stokes, and Davie--has given continuous support to this research effort. Several organizations within the community deserve special acknowledgment. The Winston-Salem Personnel Association (Col. John Reed, President) provided assistance to the effort to determine manpower needs of the community and gave full sanction to the research effort. The secondary school systems of the three counties cooperated fully in the gathering of information from students in the area. Special appreciation is expressed to Mr. Harold E. Simpson, Assistant Superintendent, Winston-Salem/Forsyth County Schools; Mr. William F. Davis, Superintendent, Stokes County Schools; and Mr. Jim Everidge, Superintendent, Davie County Schools.

Much of the source material for conducting this project was provided by the North Carolina Employment Security Commission. Mr. Donald Brande, Director, Research Division, provided sources and advice during the project. Mr. Grover Teeter, Director of the Winston-Salem office, provided source assistance in the research effort.

Typing and editorial assistance were provided by Miss Mary Molina, Mrs. Kitty Lynn Holt, Mrs. Alice Dawson, and Miss Gail Hill.

Consultation services were provided by Dr. Larry Osborne, School of Education, University of North Carolina at Greensboro, and by Dr. Raymond Horton, School of Business, University of North Carolina at Greensboro.

General Harvey H. Fischer, Director of Research and Planning, provided supervision of the research from the Department of Community Colleges. The system outlined in this section of the manual was developed under his leadership, and the results were incorporated into his model plan presented in Section Two.

Finally, appreciation is expressed to the staff of the Department of Community Colleges and to the State Board of Education for their support of this research effort.

Marcus D. Allred, Director
Occupational Information Center

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## A MODEL INFORMATION SYSTEM

# CHAPTER I

# INTRODUCTION

## Rationale

Efforts to gather information for occupational education have revealed the fact that manpower information vital to the preparation of local plans has not been utilized because systems have not been developed to obtain or analyze it. The chief sources of available manpower information are the Census Bureau, the U.S. Department of Health, Education and Welfare, and the U.S. Labor Department. The manpower information provided by these three agencies necessarily is on a national or a statewide basis. It cannot be identified with the local community served by an institution and it is of limited assistance to an institution in the preparation of its long-range plans. The U.S. Labor Department, emphasizing that the limited occupational data available was inadequate for labor researchers, economists, manpower analysts, and educational planners, announced, in 1971, a new system for gathering manpower information. This new system will require several years to become fully operational, but it is hoped that it then will provide manpower information that can be used for long-range planning at the local level.

In many institutions, an information shortage also exists in the determination of high school student aspirations and in the follow-up of students (especially "ELMS"*) who have left a technical institute or community college. These shortages in planning information were the reasons for establishing a Department of Community Colleges research project to develop systems for gathering manpower information at the local level that could be used by all institutions. The methodology has been kept simple and it has been designed to collect only the information required for long-range planning. Extraneous information has been eliminated. The three information gathering systems are:

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*"ELMS" is the abbreviation used by the Community College System for "Early Leavers with Marketable Skills." For simplicity of definition in preparation of this manual, an "ELM" is defined as a student who left the institution before graduation. Each institution should develop its own prerequisites for distinguishing "ELMS" from "Withdrawals."

A system for surveying business and industry to collect information on the occupational distribution of the local force and on the projected trends in employment by occupations.

A system to determine the aspirations of the local high school seniors in order to identify potential students for technical institutes and community colleges.

A system for follow-up surveys of students who have left an institution in order to determine the relationship between their job and the occupational education and training they received at the institution.

All three information collection systems required an additional development of procedures for processing and assembling the acquired manpower information into formats that make it easy to use by planners, curriculum developers, counselors. and teachers. The chapters in this manual are step-by-step descriptions of methods for the utilization of the procedures that have been developed to collect and assemble information on manpower needs that can be used to prepare long-range plans at the local level. The systems for surveying student aspirations, for follow-up of students, and for surveying business and industry have been designed for use by all

In order to determine these skill needs, three types of information were needed: (1) What are the occupations in the local economy for which the institution needs to provide training? (2) How many jobs exist in this category? (3) What are the skills needed to perform in these occupations?

A second concentration of effort was that of determining how the skills or training being taught by the institution are being utilized in the local economy. To determine the skill utilization, it was necessary to make surveys of the jobs the graduates and "ELMS" were entering after leaving the institution.

A third area of concentration was a determination of the career aspirations of the potential students in the Forsyth Technical Institute attendance area. This information provides an indication of the magnitude of career awareness of the area's secondary students and of their interest in the training provided by the institution.

The systems contained in this manual are methods for obtaining these three types of information. In addition, the manual provides formats relating the information from all three categories. Thus, the data is presented as a total picture, making it more useful for planning.

The following paragraphs are a general explanation of the procedures used to obtain the planning information. In addition, a conceptual view of the relatedness of the data will be provided. Following this section, step-by-step procedures for using the information systems will be outlined.

## Survey of the Skills Needed by the Local Economy

To determine the skills needed by the economy it is necessary to learn the specific jobs that exist in the economy. To quantify the skills, the number of jobs must be determined, as well as the skills required to perform institutions, regardless of size. Smaller institutions can make the surveys and assemble the manpower information by making use of their existing administrative and teaching staff. The large institutions might wish to assign a staff member part-time or full-time to the task of collecting and assembling information. The important consideration is the fact that the "Occupational Information Center" was created as a research agency to develop information systems that can be used by all institutions. The information systems are flexible and can be adjusted to the size and the needs of any institution.

## Development of the Survey System

The first step in developing the information system was to determine exactly what information is essential for developing plans. Since the plan is designed to assist in meeting the skilled manpower needs of the community, information was needed on these skills. Information was also needed to determine the skills presently being produced in the institution and utilized by the graduates and drop-outs, now identified as Early Leavers with Marketable Skills (ELMS). Data from potential students in the area was also needed and was obtained by surveying high school students.

The second consideration was to keep the system for gathering the necessary information simple enough to be used by an institution within its existing staffing pattern. Another reason for simplicity was to prevent the amount of data from becoming unmanageable. For these reasons the simplest systems possible were developed to provide the essential information required for long-range planning.

A major concentration of effort by the Information Center was to determine the skills needed by the local economy served by the institution.

them. A good supply of general information is available on the industries of the area; however, this information is inadequate to determine the job distribution in the economy and it must be supplemented by more specific occupational data. Detailed occupational data of a nature suitable for planning at the local level is not available, and it must be developed from surveys made at the local level.

In selecting methods for developing occupational information, simplicity was a major consideration. Many methods were eliminated on the basis of cost, both in dollars and in the time of staff members. The most feasible system developed for obtaining the needed information was the combined use of mail and telephone surveys. It was found that this method, coupled with timely public relations programs on what is being done, is very successful.

The survey instrument selected was adopted from the forms utilized by the U.S. Bureau of Labor Statistics in its new system for surveying the manpower needs of business and industry. This instrument was selected because it is a listing of the more common occupations in industry and because it is an instrument which will be used by the U.S. Department of Labor in this state in the future. When this source of occupational information becomes available, local planners will be able to relate the data they have collected to that of the U.S. Department of Labor.

Procedures were developed and standardized in conducting the survey of business and industry. Systems were created to tabulate the returns by occupations and only the minimum required number of reports were made from this tabulation.

The system was designed to provide the measurement of growth by occupation during a future five-year period. Growth represents only a portion of the job needs of the economy. The number of jobs created by replacement needs* is a substantial factor that sometimes exceeds the number of jobs created by growth. A relatively simple method of determining the jobs available due to replacement is included in the system. The system developed for the business and industry survey produces the total manpower needs of the local economy, for growth and replacement, and provides guidance for an institution as to the programs it should be offering for the next five years. The occupations are matched to titles in the Dictionary of Occupational Titles[1] wherever possible, and skill requirements can be determined for the jobs that have been identified.

## Student Follow-up Survey to Determine the Skills Produced by an Institution

As previously mentioned, skills are acquired both by graduates and by ELMS, the students who leave prior to graduation and find jobs. The systems developed by the Information Center identify the jobs students can fill with the skills possessed both by the graduates and by the ELMS. The mail survey method was again used and a simple and direct survey form was designed. The form was devised this way because a review of several follow-up instruments revealed the fact that in most cases many questions that were unrelated and useless to planning were asked. These questions tended to complicate the management of the information obtained by the survey and to lessen the rate of response. Only questions that provided information for planning were used in the follow-up survey form. By matching job titles reported by graduates and ELMS to the Dictionary of Occupational Titles,[2] the jobs that could be filled by participants in the various programs offered by an institution can be identified.

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*"Replacement Needs," as used in this manual, refers to the actual job openings created by workers who leave the local labor market for any reason which will require the hiring of a new employee in the same occupation.

[1] Dictionary of Occupational Titles, Vol. 1: Definitions of Titles, 3rd Edition. Washington, D.C.: U.S. Department of Labor, Manpower Administration, Bureau of Employment Security, 1965.

## Survey of Student Career Aspirations

A survey of all high school seniors in the three counties was utilized to obtain data on potential student aspirations. The principle of simplicity was again utilized to produce the information needed for planning. Seniors were selected because their aspirations tend to be more reliable than those of younger students. Questions on the form were limited to planning data and did not pertain to personal qualifications of the student, past records, and other non-essential information often obtained in such surveys. The primary planning data obtained from this survey system is a measure of the number of students interested in the programs of the institutions and the student career interests which match the local manpower needs.

## Assembling of Data

Procedures were developed to assemble the data from the three survey systems into a form which may readily be used by planners and others. The total five-year needs by occupation, coded by the Dictionary of Occupational Titles,[3] the number of graduates and ELMS by educational programs and occupations, and the high school student career interest by occupation are all listed on one report. From this report, the planner is readily able to discern the number of jobs to be filled in the local economy, the skills required to work in the various occupations, and the number of graduates and ELMS in the identified jobs. In addition, student interest in the various occupations is indicated. The compilation of information provides the necessary basic data that is required for the initiation of the long-range planning process. Shown below is an example of the type of planning information provided by this compilation:

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[2] Ibid.

[3] Ibid.

| D.O.T. | Occupation | Projected 5-Year Need | Employment by Curriculum |  | High School Seniors Interested |
|---|---|---|---|---|---|
|  |  |  | 1970-71 Graduates | 1970-71 ELMS |  |
| 860.381 | Carpenter | 964 | T-001(1),V-007(1), V-003(1) | V-022(1) | 23 |
| 816.884 | Welder, Flamecutter | 201 | V-050(3),V-013(1) | V-050(1) | 8 |
| 804.281 | Sheet Metal Worker | 329 | ---- | ---- | -- |
| 141.081 | Commercial Artist | 28 | ---- | ---- | 27 |
| 020.188 | Computer Programmer, Business | 38 | ---- | ---- | 37 |
| 280.358 | Salesman--Wholesale & Retail Trades | 1543 | ---- | ---- | -- |
| 160.188 | Accountant | 18 | T-018(4) | ---- | 45 |

Information such as that shown above can give the educational planner a basis for considering expanded course offerings; it can give the community college or technical institute an estimate of enrollment in various programs; it can provide the institution with a method of evaluating the successful placement of its graduates; and it can provide the high school counselor with useful information for guiding students in their choice of careers.

# CHAPTER II

# THE BUSINESS AND INDUSTRY SURVEY

## Rationale

The purpose of the business and industry survey is to identify existing job distributions within the area for which the local technical institute could provide training and to project the job distribution likely to exist over a five-year period (1972-77).

Because the majority of the Labor Force in the area in which the pilot survey was conducted is employed in companies and organizations employing 50 or more persons, these companies were surveyed by the total census method; i.e., all companies with employment of 50 or more were included in the sample.

The smaller companies (those employing fewer than 50), while comprising a much smaller percentage of the total employment, employ a significant number of persons with the kinds of skills for which the technical institute can provide training. Therefore, they were surveyed by a sampling technique (see details under THE TELEPHONE SURVEY) which was designed to give an adequate base for predicting, through extrapolation, overall employment distribution in the smaller companies by job classifications which could be matched to the job classifications within the larger companies.

## The Survey Sample

The survey included 480 businesses and industries. The number of responses was 374--a response rate of 78% from the combined mail and telephone surveys. The total employment represented by the 480 industries and firms surveyed was approximately 80,000; the employment represented by the survey response, approximately 60,000.

The mail survey form was sent to all of the industries having 50 or more employees in the third quarter of the fiscal year 1971-72.* Of the 282 businesses surveyed, 191 responded. This gave a response rate of 67%. Approximately 38% of the businesses responded to the first mailing; approximately 28% responded to the second mailing. Therefore, about 66% of the businesses surveyed by mail had replied after two mailings. Although the mail survey represented a total sample, the results should be interpreted as a slight underestimation, due to the failure of some companies to respond to the survey.

The telephone survey information was obtained from approximately one out of every eight industries having fewer than 50 employees in the third quarter of the fiscal year 1971-72.* Of the 198 businesses sampled, 183 responded. This gave a response rate of 92%. Since the telephone survey represented only a sample (approximately 12½%) of the industries and organizations employing fewer than 50 persons, it was necessary to use extrapolation procedures to inflate the response data to represent the total number of small firms in the area surveyed.

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*This information was obtained from a print-out obtained from the Employment Security Commission.

## MAIL SURVEY SYSTEM

1. A CARD FILE IS PREPARED FOR THE MAIL SURVEY. THIS FILE INCLUDES THE NAMES AND ADDRESSES OF EACH BUSINESS EMPLOYING FIFTY OR MORE PERSONS. A LIST OF THE "COVERED" EMPLOYMENT MAY BE OBTAINED FROM THE LOCAL EMPLOYMENT SECURITY OFFICE. THE "NON-COVERED" EMPLOYMENT LIST MAY BE CONSTRUCTED WITH THE ASSISTANCE OF THE EMPLOYMENT SECURITY OFFICE, THE LOCAL CHAMBER OF COMMERCE, LOCAL GOVERNMENTAL AGENCIES, ETC. FROM THE CARD FILE, ADDRESS LABELS ARE PREPARED.

2. LARGE MAILING ENVELOPES (SUGGESTED SIZE, 9" X 12") ARE PRINTED WITH THE INSTITUTION'S RETURN ADDRESS. THE PRE-ADDRESSED MAILING LABELS (NO. 1, ABOVE) ARE USED WITH THESE ENVELOPES. SINCE THIS OUT-GOING PACKAGE WILL CONTAIN ONLY PRINTED MATTER, IT MAY BE STAMPED WITH THIRD CLASS POSTAGE (APPROXIMATELY 10 CENTS). SMALLER ENVELOPES (SUGGESTED SIZE, 6½" X 9½"), TO BE ENCLOSED WITH THE SURVEY FORM FOR ITS RETURN, ARE PRE-ADDRESSED WITH THE INSTITUTION'S ADDRESS AND STAMPED WITH FIRST-CLASS POSTAGE (APPROXIMATELY 16 CENTS).

3. THE LETTER TO ACCOMPANY THE SURVEY FORM IS SIGNED OR STAMPED WITH THE SENDER'S SIGNATURE AND STAPLED TO THE SURVEY FORM.

4. A CODE NUMBER, FOR IDENTIFICATION PURPOSES, IS ASSIGNED EACH BUSINESS OR INDUSTRY. THE PURPOSE OF THIS CODE NUMBER IS TO PRESERVE THE CONFIDENTIALITY OF THE INFORMATION FURNISHED, AND RESULTS OF THE SURVEY ARE REPORTED AND TABULATED BY NUMBER RATHER THAN BY COMPANY NAME. IN ORDER TO ASSURE THAT ALL RETURNED SURVEY FORMS CAN BE IDENTIFIED (ESPECIALLY IN CASES IN WHICH THE RESPONDENT DOES NOT FURNISH A NAME ON THE RETURNED FORM), THE COMPANY'S CODE NUMBER SHOULD BE WRITTEN ON THE SURVEY FORM ITSELF, ON THE LOWER CORNER OR BACK OF A PAGE. THE RETURN ENVELOPE MAY ALSO BE CODED.

5. WHEN THE MAILING ENVELOPES HAVE BEEN ADDRESSED, STAMPED, AND STUFFED FOR MAILING, A RECORD IS MADE, ON EACH COMPANY'S CARD, OF THE DATE OF THE MAILING (SEE PAGE 27).

## THE INTRODUCTORY LETTER (TO ACCOMPANY SURVEY FORM)

1. A LETTER SIMILAR TO THAT SHOWN BELOW IS SENT WITH THE SURVEY FORM. (STATEMENTS IN THE LETTER CONCERNING ENDORSEMENT ARE, OF COURSE, TO BE MODIFIED IN CONFORMITY WITH EACH INSTITUTION'S SUPPORTING AGENCIES.)

2. THE LETTER IS ADDRESSED TO THE "DIRECTOR OF PERSONNEL" IN EACH INDUSTRY UNLESS THE NAME OF THE APPROPRIATE PERSON IS KNOWN.

3. THE LETTER AND SURVEY FORM ARE ENCLOSED, ALONG WITH A STAMPED RETURN ENVELOPE, PRE-ADDRESSED TO THE OFFICE IN THE INSTITUTION CONDUCTING THE SURVEY.

Dear Sir:

The Department of Community Colleges has established an Occupational Information Center, as a research project, at Forsyth Technical Institute. Its goal is to determine the trained manpower needs of the community served by Forsyth Technical Institute. The research project is developing a practical system to determine the current and future jobs that can be filled by the graduates of Forsyth Technical Institute.

Our information system is a part of our long-range planning concept being designed to insure training programs that will assist in meeting your present and future trained manpower needs. Our plans are completely dependent upon the job information which you and other employers in this area can give us. We ask your assistance in this project, which has the endorsement of the Winston-Salem Chamber of Commerce and of the Winston-Salem Personnel Association.

We know that you receive numerous requests for this kind of information, and we are doing everything possible to reduce our demands on your time. This survey form follows the new format of the U.S. Department of Labor survey form used last year. We are working with the Employment Security Commission Research Bureau and hope that eventually we can obtain most of our job information from their new "occupational employment surveys." We also coordinate with other agencies when we learn that they are planning similar surveys.

All information furnished will be confidential and will be used for statistical purposes only, without identification of an individual firm. If you have any questions regarding this survey, please call or write the Occupational Information Center so that we can talk with you personally.

Thank you for your assistance in this mutually beneficial project.

Sincerely,

(Name)
(Director)

THE REMINDER LETTER (TO ACCOMPANY SECOND SURVEY FORM)

1. APPROXIMATELY THREE WEEKS AFTER THE FIRST MAILING OF THE SURVEY FORMS, NON-RESPONDENTS ARE SENT A SECOND SURVEY FORM WITH AN ACCOMPANYING LETTER SIMILAR TO THAT SHOWN BELOW.
2. A PRE-ADDRESSED, STAMPED ENVELOPE IS AGAIN ENCLOSED FOR THE RETURN OF THE SURVEY FORM.

(Director of Personnel)
(Company)
(Address)

Dear Sir:

We recently mailed you a questionnaire asking for estimates of your current and future manpower needs in positions for which Forsyth Technical Institute might provide training. This survey is of prime importance in planning the curriculums to be offered students to improve their educational and career preparation. As we stated in our previous letter, this information will be held in strict confidence as far as company names and figures are concerned, and will be used only for statistical purposes in compiling total manpower needs for this area.

We realize that this is a busy season of the year and that you have many pressing matters to attend to, but we hope that you will be able to find time to provide us with this important planning information which only you can furnish.

If there is any way we may assist you, or if you would like a personal visit from us, please call or write the Information Center.

If you have already returned the questionnaire, please consider this communication a "Thank you" for your valuable help.

Sincerely,

(Name)
(Director)

Possibly our original request went astray in the mails; therefore, we are enclosing another questionnaire. Thank you.

## THE SURVEY INSTRUMENT

THE BUSINESS AND INDUSTRY SURVEY INSTRUMENT IS DESIGNED ACCORDING TO THE FOLLOWING CONSIDERATIONS:

A. THAT OCCUPATIONAL TITLES BE ONES COMMONLY UNDERSTOOD THROUGHOUT INDUSTRY. THEREFORE, THE ONES USED IN THIS SURVEY WERE, IN GENERAL, ADAPTED FROM THE U.S. LABOR DEPARTMENT'S SURVEY FORM--A FORM WHICH WILL GAIN INCREASED USAGE AND STANDARDIZATION THROUGHOUT THE NATION IN THE NEAR FUTURE. SOME ADDITIONAL TITLES WERE INCLUDED TO REPRESENT NEW CURRICULAR OFFERINGS WITHIN THE COMMUNITY COLLEGE SYSTEM.

B. THAT AMPLE SPACE SHOULD BE PROVIDED FOR TITLES COMMON TO A PARTICULAR TYPE OF BUSINESS, NOT INCLUDED ON THE FORM.

C. THAT THE RESPONDENT SHOULD BE ENCOURAGED TO REPORT ANY ADDITIONAL INFORMATION OR OPINIONS REGARDING THE INSTITUTION'S PROGRAMS OR FUTURE OFFERINGS--THEREFORE, SPACE IS PROVIDED ON THE LAST PAGE FOR THESE COMMENTS.

NORTH CAROLINA DEPARTMENT OF COMMUNITY COLLEGES
OCCUPATIONAL INFORMATION CENTER
2104 Silas Creek Parkway
Winston Salem, N. C. 27103

## Survey of Projected Skill Needs of the Labor Market

Date____________________

The groupings used for this survey were designed by the Labor Department for their job survey form. The first six groupings ("A" through "F") are general and list jobs that apply to most businesses and industries. The seventh occupational grouping ("G"), "Production (Plant) Operations," is directed to the specific manpower skill needs of your particular business. We have left this last grouping unstructured, and we ask that you list in this category the jobs which could normally be filled by an employee who had attended a one or two-year program at Forsyth Technical Institute.

GENERAL DIRECTIONS

1. Column 1 - Job Classifications. Please match, insofar as possible, your company's job titles with those listed under each grouping. Leave blank classifications that do not apply to your business. Please add in the blank spaces the jobs in your company which are not listed on the form.
2. Column 2 - Current Employment. Please list the number of current employees, in each job listed, for which Forsyth Technical Institute might provide training.
3. Column 3 - Estimated Employment - 1977. Please list the number of employees you estimate you will have in each job classification in 1977 (in the month you have indicated above).
4. A stamped, addressed envelope is enclosed for the return of the completed form.
5. If you have any questions, please call or write the Occupational Information Center. Thank you.

THE DEPARTMENT OF COMMUNITY COLLEGES WILL HOLD IN STRICT CONFIDENCE
ALL INFORMATION FURNISHED

## A. Service Occupations

Include workers in jobs performing services for persons that require direct contact or close association with the individual; occupations concerned with the protection of individuals, or of public or private property; and occupations concerned with preparing and serving food and beverages.

| Job Classifications | Current Employment | Estimated Employment in 1977 |
|---|---|---|
| Fire Service Workers . . . . . . . . . . . . . . | | |
| Food Service Workers . . . . . . . . . . . . . . | | |
| Foremen, Non-working . . . . . . . . . . . . . . | | |
| Nurses, Practical . . . . . . . . . . . . . . | | |
| Security Service Workers . . . . . . . . . . . . . . | | |
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## B. Maintenance, Construction, Repair and Powerplant Occupations

Include all skilled and semi-skilled workers performing machine and manual tasks involving maintenance, construction, repair, and powerplant operations in occupations requiring training beyond that learned on the job.

| Job Classifications | Current Employment | Estimated Employment in 1977 |
|---|---|---|
| Brickmason | | |
| Carpenter | | |
| Electrician | | |
| Foreman, Non-working | | |
| Instrument Repairman | | |
| Machinist, Maintenance | | |
| Maintenance Man, General Utility | | |
| Mechanic, Automotive | | |
| Mechanic, Body Repair, Automotive | | |
| Mechanic, Diesel | | |
| Mechanic, Maintenance | | |
| Mechanic, Office Machines | | |
| Millwright | | |
| Plumber and/or Pipefitter | | |
| Serviceman, Radio and T. V. | | |
| Sheet Metal Workers, Maintenance | | |
| Stationary Engineer | | |
| Tool and Die Maker | | |
| Welders and Flamecutters, Maintenance | | |
| | | |
| | | |
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| | | |

## C. Managers and Officers

Include persons concerned with managerial functions common to many types of organizations as well as occupations which require a knowledge of the management and operations of this organization, for which training may be provided by Forsyth Technical Institute.

| Job Classifications | Current Employment | Estimated Employment in 1977 |
|---|---|---|
| Branch Manager | | |
| Departmental Manager, Advertising | | |
| Departmental Manager, Budget | | |
| Departmental Manager, Personnel and Training | | |
| Departmental Manager, Public Relations | | |
| Departmental Manager, Purchasing | | |
| Departmental Manager, Sales and Distribution | | |
| Plant Manager | | |
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## D. Technician Occupations

Include all persons engaged in technical work utilizing theoretical knowledge of fundamental scientific, engineering, mathematical, computer programing, or draft design principles comparable to those acquired through study at community colleges, technical institutes, or other formal post high school training less extensive than a 4-year college course.

| Job Classifications | Current Employment | Estimated Employment in 1977 |
|---|---|---|
| Architectural Technician | | |
| Chemical Technician | | |
| Commercial Artist | | |
| Commercial Graphics Technician | | |
| Computer Programmer, Business | | |
| Computer Programmer, Scientific and Technical | | |
| Decorator, Interior | | |
| Designer, Interior | | |
| Dental Technician | | |
| Draftsman, Building Trades | | |
| Draftsman, Mechanical | | |
| Electrical and Electronics Technician | | |
| Electronics Engineering Technician | | |
| Engineering Technician, Civil | | |
| Engineering Technician, Electrical | | |
| Engineering Technician, Mechanical | | |
| Engineering Technician, Safety | | |
| Environmental Engineering Technician | | |
| Food Processing Technician | | |
| Interior Design Technician | | |
| Marine Technician | | |
| Medical Technician | | |

## D. Technician Occupations (continued)

| Job Classifications | Current Employment | Estimated Employment in 1977 |
|---|---|---|
| Ornamental Horticulture Technician | | |
| Printing Trades Craftsman | | |
| Registered Nurse | | |
| Science Technician | | |
| Surveyor | | |
| Other | | |
| | | |
| | | |
| | | |

## E. Sales Occupations

Include persons concerned wholly or primarily with selling when knowledge of the goods or services sold is required. Exclude Sales Engineers, Cashiers, etc.

| Job Classifications | Current Employment | Estimated Employment in 1977 |
|---|---|---|
| Salesman (exclude sales engineer) | | |
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## Clerical Occupations

Include OFFICE and PLANT clerical personnel. Office Clerical Work involves preparing, transcribing, systematizing, and preserving communications and records; collecting accounts; and distributing information. Plant Clerical Work involves planning, coordinating, or expediting of production and the flow of work; of the clerical aspects of receiving, storing, issuing or shipping of materials, merchandise, supplies, or equipment.

| Job Classifications | Current Employment | Estimated Employment in 1977 |
|---|---|---|
| **OFFICE CLERICAL WORKERS** | | |
| Accounting Clerk | | |
| Bookkeeper, Hand | | |
| Collector and Adjuster | | |
| Computer Operator | | |
| File Clerk | | |
| General Clerk | | |
| Office Machine Operator | | |
| Payroll and/or Timekeeping Clerk | | |
| Peripheral EDP Equipment Operator | | |
| Personnel Clerk | | |
| Receptionist | | |
| Secretary, Executive | | |
| Secretary, Legal | | |
| Secretary, Medical | | |
| Stenographer | | |
| Switchboard Operator - Receptionist | | |
| | | |
| | | |
| | | |

## F. Clerical Occupations (continued)

| Job Classifications | Current Employment | Estimated Employment in 1977 |
|---|---|---|
| PLANT CLERICAL WORKERS | | |
| Production Clerk and/or Coordinator . . . . . | | |
| Shipping and/or Receiving Clerk . . . . . . . . | | |
| Stock Clerk (Storekeeper) . . . . . . . . . . . | | |
| Inventory Clerk . . . . . . . . . . . . . . . | | |
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## G. Production (Plant) Operations

Include all skilled and semi-skilled workers performing machine or manual tasks involving production and/or material movement operations whose job skills and performance would profit from a one or two-year occupation education program beyond high school. (Do not include workers "hired off the street" and prepared for work on a specific piece of equipment, through a plant operated training program.)

| Job Classifications | Current Employment | Estimated Employment in 1977 |
|---|---|---|
| Foreman, Non-working . . . . . . . . . . . . | | |
| Inspector . . . . . . . . . . . . . . . . . | | |
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Nature Of Your Business

Please describe the principal activity and the major product or service of your business, e.g., manufacturing - women's shoes; warehousing - steel products; research lab - radio and T.V. receiver; retail trade - shoe store; etc.

Emerging Occupations

List any emerging occupations in your industry which will require specialized training which could be provided by a technical institute or community college.

Comments - any comments you may wish to make

Additional Information

(Should questions or additional suggestions arise, please call: 919/723-0302)

Name and Telephone Number of Person and Office completing this survey form

The Department of Community Colleges will hold all information furnished by you in strict confidence.

## LETTER OF APPRECIATION

A BRIEF LETTER OF APPRECIATION, ACKNOWLEDGING RECEIPT OF THE COMPLETED SURVEY FORM, IS SENT TO EACH EMPLOYER PARTICIPATING IN THE SURVEY. AN EXAMPLE OF THE LETTER OF APPRECIATION IS SHOWN BELOW.

(Director of Personnel)
(Company)
(Address)

Dear Sir:

The Occupational Information Center acknowledges, with appreciation, your participation in our survey of trained manpower needs in the area served by Forsyth Technical Institute.

Because you and many other employers in this area have given generously of the time required to complete our survey form, we have now accumulated a large amount of data which should prove invaluable to the curriculum planners for the community college system. This, in turn, should result in improved training and placement for graduates of Forsyth Tech and, ultimately, in better-qualified applicants for emerging positions in your company.

Again, thank you for your interest and your cooperation. Please feel free to contact us at any time concerning the results of this survey as well as any suggestions you may have for improved communications between the community and the community college system.

Sincerely yours,

(Name)
(Director)

## COMPILATION OF DATA - MAIL SURVEY

IN ORDER TO INSURE CONFIDENTIALITY, ALL BUSINESSES SURVEYED BY MAIL ARE ASSIGNED A CODE NUMBER FOR IDENTIFICATION. A CARD FILE IS SET UP, LISTING EACH COMPANY BY NAME AND BY CODE NUMBER. EACH COMPANY'S CARD INCLUDES THE STANDARD INDUSTRIAL CLASSIFICATION (SIC) CODE OF THE COMPANY, THE TOTAL NUMBER OF PERSONS EMPLOYED, AND A RECORD OF THE COMPANY'S RESPONSE TO THE SURVEY. SHOWN BELOW IS A SAMPLE CARD FOR A FICTITIOUS COMPANY.

ABC Manufacturing Co.
P.O. Box 8111
Winston-Salem, NC 27103

No. 55
SIC 3498
Employment 407

Survey form sent: 3-27-72
2nd form sent: 4-17-72
3rd form sent: - - - -
Reply received: 4-23-72

AFTER RECORDING THE RESPONSE DATE ON THE CARD FILE, THE INFORMATION FROM THE BUSINESS SURVEY IS TABULATED, USING WORKSHEETS SIMILAR TO THOSE SHOWN ON THE FOLLOWING PAGES. SEPARATE WORKSHEETS ARE PREPARED FOR EACH OCCUPATION LISTED ON THE SURVEY FORM, INCLUDING "WRITE-IN" OCCUPATIONS LISTED BY THE COMPANIES. ON EACH SET OF WORKSHEETS IS LISTED A CODE NUMBER FOR EACH BUSINESS OR INDUSTRY (REQUIRING MORE THAN ONE SHEET FOR EACH OCCUPATION) WITH COLUMNS FOR RECORDING PRESENT AND PROJECTED EMPLOYMENT REPORTED BY EACH INDUSTRY. THUS IT CAN BE QUICKLY SEEN, ON THE SAMPLE WORKSHEETS SHOWN, THAT OF 282 COMPANIES SURVEYED, 29 COMPANIES REPORTED EMPLOYMENT OF CARPENTERS. A TOTALING OF THE COLUMNS DENOTING 1972 AND 1977 EMPLOYMENT SHOWS THAT THESE 29 COMPANIES EMPLOYED 298 WORKERS IN THIS OCCUPATION AT THE TIME OF THE SURVEY AND THAT THEY ESTIMATE THEY WILL HAVE 589 EMPLOYED IN THIS OCCUPATION IN 1977. THUS, THE FIVE-YEAR PROJECTED GROWTH IN NUMBER OF CARPENTERS AMONG THE COMPANIES REPLYING TO THE MAIL SURVEY WAS 291. THIS FIGURE WAS COMBINED WITH THAT FROM THE TELEPHONE SURVEY (TO BE EXPLAINED IN SUBSEQUENT PAGES) TO OBTAIN THE PROJECTED GROWTH FIGURE FOR CARPENTERS. A REPLACEMENT ESTIMATE IS MADE, USING THE FORMULA SHOWN IN APPENDIX B, AND THIS FIGURE IS ADDED TO THE PROJECTED GROWTH FIGURE TO OBTAIN THE TOTAL FIVE-YEAR EMPLOYMENT NEED FOR CARPENTERS.

# BUSINESS AND INDUSTRY SURVEY
# TABULATION SHEET - MAIL SURVEY

Occupation Carpenter
D.O.T. Number 860.381

Totals: 1977 589
1972 298
Growth 291

| Co. # | 1972 | 1977 | Co. # | 1972 | 1977 | Co. # | 1972 | 1977 | Co. # | 1972 | 1977 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 60 | 60 | 26 | | | 51 | | | 76 | | |
| 2 | | | 27 | 0 | 4 | 52 | 0 | 1 | 77 | | |
| 3 | | | 28 | | | 53 | | | 78 | | |
| 4 | | | 29 | 6 | 7 | 54 | | | 79 | | |
| 5 | | | 30 | | | 55 | | | 80 | | |
| 6 | | | 31 | | | 56 | | | 81 | | |
| 7 | 2 | 2 | 32 | 1 | 4 | 57 | | | 82 | | |
| 8 | | | 33 | 2 | 2 | 58 | | | 83 | | |
| 9 | 12 | 15 | 34 | | | 59 | | | 84 | | |
| 10 | | | 35 | 1 | 3 | 60 | | | 85 | | |
| 11 | | | 36 | | | 61 | | | 86 | | |
| 12 | 10 | 12 | 37 | | | 62 | | | 87 | 0 | 2 |
| 13 | | | 38 | | | 63 | | | 88 | | |
| 14 | | | 39 | | | 64 | | | 89 | | |
| 15 | | | 40 | | | 65 | 60 | 85 | 90 | | |
| 16 | | | 41 | | | 66 | | | 91 | | |
| 17 | 3 | 5 | 42 | | | 67 | | | 92 | | |
| 18 | | | 43 | | | 68 | 3 | 3 | 93 | | |
| 19 | | | 44 | | | 69 | | | 94 | | |
| 20 | | | 45 | 2 | 4 | 70 | 55 | 75 | 95 | | |
| 21 | | | 46 | | | 71 | | | 96 | | |
| 22 | | | 47 | 2 | 2 | 72 | | | 97 | | |
| 23 | 1 | 2 | 48 | | | 73 | | | 98 | | |
| 24 | | | 49 | | | 74 | | | 99 | | |
| 25 | 3 | 5 | 50 | 4 | 4 | 75 | | | 100 | | |

# BUSINESS AND INDUSTRY SURVEY
# TABULATION SHEET - MAIL SURVEY

Occupation Carpenter
D.O.T. Number 860.381

| Co. # | 1972 | 1977 | Co. # | 1972 | 1977 | Co. # | 1972 | 1977 | Co. # | 1972 | 1977 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 101 | | | 126 | | | 151 | | | 176 | | |
| 102 | | | 127 | | | 152 | | | 177 | | |
| 103 | | | 128 | | | 153 | | | 178 | | |
| 104 | | | 129 | | | 154 | | | 179 | | |
| 105 | | | 130 | | | 155 | | | 180 | | |
| 106 | | | 131 | | | 156 | | | 181 | | |
| 107 | | | 132 | | | 157 | | | 182 | | |
| 108 | | | 133 | 40 | 240 | 158 | | | 183 | 1 | 2 |
| 109 | | | 134 | | | 159 | | | 184 | | |
| 110 | | | 135 | | | 160 | | | 185 | | |
| 111 | 7 | 7 | 136 | | | 161 | | | 186 | | |
| 112 | | | 137 | | | 162 | | | 187 | | |
| 113 | | | 138 | | | 163 | | | 188 | | |
| 114 | | | 139 | | | 164 | | | 189 | | |
| 115 | | | 140 | | | 165 | | | 190 | | |
| 116 | | | 141 | | | 166 | | | 191 | | |
| 117 | | | 142 | | | 167 | | | 192 | | |
| 118 | | | 143 | | | 168 | | | 193 | | |
| 119 | | | 144 | | | 169 | | | 194 | | |
| 120 | | | 145 | | | 170 | | | 195 | | |
| 121 | | | 146 | | | 171 | | | 196 | | |
| 122 | | | 147 | | | 172 | | | 197 | | |
| 123 | 2 | 2 | 148 | | | 173 | | | 198 | | |
| 124 | | | 149 | | | 174 | | | 199 | | |
| 125 | | | 150 | | | 175 | | | 200 | | |

BUSINESS AND INDUSTRY SURVEY
TABULATION SHEET - MAIL SURVEY

Occupation Carpenter
D.O.T. Number 860.381

| Co. # | 1972 | 1977 | Co. # | 1972 | 1977 | Co. # | 1972 | 1977 | Co. # | 1972 | 1977 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 201 | | | 226 | | | 251 | | | 276 | | |
| 202 | | | 227 | | | 252 | | | 277 | | |
| 203 | | | 228 | | | 253 | | | 278 | | |
| 204 | | | 229 | | | 254 | 2 | 4 | 279 | | |
| 205 | | | 230 | | | 255 | | | 280 | | |
| 206 | | | 231 | | | 256 | | | 281 | | |
| 207 | | | 232 | | | 257 | | | 282 | | |
| 208 | | | 233 | | | 258 | | | 283 | | |
| 209 | | | 234 | | | 259 | | | 284 | | |
| 210 | | | 235 | | | 260 | 10 | 15 | 285 | | |
| 211 | | | 236 | | | 261 | | | 286 | | |
| 212 | | | 237 | 0 | 1 | 262 | | | 287 | | |
| 213 | | | 238 | | | 263 | | | 288 | | |
| 214 | | | 239 | | | 264 | 8 | 20 | 289 | | |
| 215 | | | 240 | | | 265 | | | 290 | | |
| 216 | | | 241 | | | 266 | | | 291 | | |
| 217 | | | 242 | | | 267 | | | 292 | | |
| 218 | | | 243 | | | 268 | | | 293 | | |
| 219 | | | 244 | | | 269 | | | 294 | | |
| 220 | | | 245 | | | 270 | | | 295 | | |
| 221 | | | 246 | | | 271 | | | 296 | | |
| 222 | | | 247 | 1 | 1 | 272 | | | 297 | | |
| 223 | | | 248 | | | 273 | | | 298 | | |
| 224 | | | 249 | | | 274 | | | 299 | | |
| 225 | | | 250 | | | 275 | | | 300 | | |

## THE TELEPHONE SURVEY

In accordance with the decision to use the sample method of surveying those businesses employing fewer than fifty persons, the print-out of local companies, obtained from the Employment Security Commission. was used to make a list of every eighth company in the three-county area employing fewer than fifty persons. The completed list was composed of 198 businesses, their telephone numbers. and number of employees.

Each company on the list was contacted by telephone. The caller asked for either the personnel director or the general manager, depending on the size of the business. When the appropriate person was reached, the purpose of the call was explained and a courteous request for assistance was made. Then, using the business survey form as a general guide, the response was recorded on a separate sheet under the company name. (These sheets were kept confidential and code numbers assigned to each company for tabulation purposes.)

The telephone survey methods elicited a high response rate (92%). Although the employer was questioned only about his employment figures and projections, many times he volunteered additional information concerning training needs, employment practices, etc.

The employer was, in each case, thanked for his participation in the survey and assured of the confidentiality of the treatment of the information.

# TELEPHONE SURVEY

## CONFIDENTIAL

Company Name ________________
Telephone No.________________

No.________________
SIC________________
Employment__________

| | 1972 | 1977 |
|---|---|---|
| A. SERVICE OCCUPATIONS | | |
| ________________ | ____ | ____ |
| ________________ | ____ | ____ |
| ________________ | ____ | ____ |
| ________________ | ____ | ____ |
| B. MAINTENANCE, CONST., REPAIR. POWERPLANT | | |
| ________________ | ____ | ____ |
| ________________ | ____ | ____ |
| ________________ | ____ | ____ |
| ________________ | ____ | ____ |
| ________________ | ____ | ____ |
| ________________ | ____ | ____ |
| ________________ | ____ | ____ |
| ________________ | ____ | ____ |
| C. MANAGERS AND OFFICERS | | |
| ________________ | ____ | ____ |
| ________________ | ____ | ____ |
| ________________ | ____ | ____ |
| ________________ | ____ | ____ |

| | 1972 | 1977 |
|---|---|---|
| D. TECHNICIANS | | |
| ____________ | ____ | ____ |
| ____________ | ____ | ____ |
| ____________ | ____ | ____ |
| ____________ | ____ | ____ |
| E. SALES | | |
| ____________ | ____ | ____ |
| ____________ | ____ | ____ |
| F. CLERICAL | | |
| ____________ | ____ | ____ |
| ____________ | ____ | ____ |
| ____________ | ____ | ____ |
| ____________ | ____ | ____ |
| ____________ | ____ | ____ |
| ____________ | ____ | ____ |
| G. PRODUCTION (PLANT) | | |
| ____________ | ____ | ____ |
| ____________ | ____ | ____ |
| ____________ | ____ | ____ |

## COMPILATION OF DATA - TELEPHONE SURVEY

THE INFORMATION OBTAINED FROM THE TELEPHONE SURVEY IS FIRST RECORDED BY LISTING, ON THE TELEPHONE SURVEY SHEET, (PAGE 32), THE JOB TITLES AND NUMBER OF EMPLOYEES GIVEN OVER THE TELEPHONE.

AFTER THE TELEPHONE SURVEY IS COMPLETED, A SEPARATE WORKSHEET, SIMILAR TO THAT USED TO COMPILE THE MAIL SURVEY INFORMATION, IS PREPARED FOR EACH OCCUPATION MENTIONED BY EMPLOYERS BY TELEPHONE. (WHERE POSSIBLE, JOB TITLES ARE MATCHED TO THOSE PRINTED ON THE MAIL SURVEY FORM.) THE PROJECTIONS BY OCCUPATION GIVEN BY EACH EMPLOYER ARE RECORDED ON THE APPROPRIATE WORKSHEET BY PLACING HIS EMPLOYMENT FIGURES AND PROJECTIONS BESIDE HIS COMPANY'S NUMBER. THE TOTAL PRESENT (1972) EMPLOYMENT AND PROJECTED (1977) EMPLOYMENT FIGURES FOR EACH OCCUPATION SURVEYED ARE PLACED IN THE TOTALS COLUMNS AT THE TOP OF THE WORKSHEET. THEN, BECAUSE THIS FIGURE REPRESENTS APPROXIMATELY A 12½% SAMPLE OF THE TOTAL EMPLOYMENT IN BUSINESSES OF FIFTY OR FEWER EMPLOYEES, A SIMPLIFIED EXTRAPOLATION IS MADE BY MULTIPLYING THE SURVEY RESULTS BY EIGHT. THUS, IN THE SAMPLE SHOWN ON THE FOLLOWING TWO PAGES, THE ESTIMATED NUMBER OF CARPENTERS EMPLOYED IN COMPANIES SURVEYED BY TELEPHONE IS 712, AND THE PROJECTED EMPLOYMENT IS 1,240. THEREFORE, THE PROJECTED GROWTH FIGURE, OBTAINED BY SUBTRACTING PRESENT EMPLOYMENT FROM PROJECTED EMPLOYMENT, IS 528. THIS FIGURE IS ADDED TO THE FIGURE OBTAINED FROM THE MAIL SURVEY TO OBTAIN THE PROJECTED GROWTH FIGURE FOR CARPENTERS. (A REPLACEMENT ESTIMATE IS ADDED TO THE PROJECTED GROWTH FIGURE TO OBTAIN THE TOTAL FIVE-YEAR EMPLOYMENT NEED.)

# BUSINESS AND INDUSTRY SURVEY
# TABULATION SHEET - TELEPHONE SURVEY

Occupation Carpenter
D.O.T. Number 860.381

Totals: 1977 155 x 8 = 1240
1972 89 x 8 = 712
Growth 528

| Co. # | 1972 | 1977 | Co. # | 1972 | 1977 | Co. # | 1972 | 1977 | Co. # | 1972 | 1977 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 301 | | | 326 | | | 351 | | | 376 | | |
| 302 | | | 327 | | | 352 | | | 377 | | |
| 303 | | | 328 | | | 353 | | | 378 | | |
| 304 | | | 329 | | | 354 | | | 379 | | |
| 305 | | | 330 | | | 355 | | | 380 | | |
| 306 | | | 331 | | | 356 | | | 381 | | |
| 307 | 2 | 5 | 332 | 12 | 12 | 357 | | | 382 | | |
| 308 | | | 333 | | | 358 | | | 383 | 5 | 8 |
| 309 | | | 334 | | | 359 | | | 384 | | |
| 310 | | | 335 | | | 360 | 13 | 26 | 385 | | |
| 311 | | | 336 | | | 361 | | | 386 | | |
| 312 | | | 337 | | | 362 | | | 387 | | |
| 313 | | | 338 | | | 363 | | | 388 | | |
| 314 | 8 | 20 | 339 | | | 364 | | | 389 | | |
| 315 | | | 340 | | | 365 | | | 390 | | |
| 316 | | | 341 | | | 366 | | | 391 | | |
| 317 | | | 342 | | | 367 | 9 | 18 | 392 | | |
| 318 | | | 343 | | | 368 | | | 393 | | |
| 319 | | | 344 | | | 369 | | | 394 | | |
| 320 | | | 345 | | | 370 | | | 395 | | |
| 321 | | | 346 | | | 371 | | | 396 | | |
| 322 | | | 347 | | | 372 | | | 397 | | |
| 323 | | | 348 | 3 | 6 | 373 | | | 398 | | |
| 324 | | | 349 | | | 374 | | | 399 | | |
| 325 | | | 350 | | | 375 | | | 400 | | |

*The figures obtained from the survey sample represented approximately 12½% of the employment in companies with under 50 employees. Thus the sample figures were multiplied by 8.

# BUSINESS AND INDUSTRY SURVEY
# TABULATION SHEET - TELEPHONE SURVEY

Occupation Carpenter)
D.O.T. Number 860.381

| Co. # | 1972 | 1977 | Co. # | 1972 | 1977 | Co. # | 1972 | 1977 | Co. # | 1972 | 1977 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 401 | | | 426 | | | 451 | | | 476 | | |
| 402 | | | 427 | | | 452 | | | 477 | | |
| 403 | | | 428 | | | 453 | | | 478 | | |
| 404 | | | 429 | | | 454 | | | 479 | | |
| 405 | | | 430 | | | 455 | | | 480 | | |
| 406 | | | 431 | | | 456 | | | 481 | | |
| 407 | | | 432 | | | 457 | | | 482 | | |
| 408 | | | 433 | 10 | 10 | 458 | | | 483 | | |
| 409 | | | 434 | | | 459 | | | 484 | | |
| 410 | | | 435 | | | 460 | 3 | 6 | 485 | | |
| 411 | | | 436 | | 4 | 461 | | | 486 | | |
| 412 | | | 437 | | | 462 | | | 487 | | |
| 413 | | | 438 | | | 463 | | | 488 | | |
| 414 | | | 439 | | | 464 | | | 489 | | |
| 415 | | | 440 | | | 465 | | | 490 | | |
| 416 | 20 | 40 | 441 | | | 466 | | | 491 | | |
| 417 | | | 442 | | | 467 | | | 492 | | |
| 418 | | | 443 | | | 468 | | | 493 | | |
| 419 | | | 444 | | | 469 | | | 494 | | |
| 420 | | | 445 | | | 470 | | | 495 | | |
| 421 | | | 446 | | | 471 | | | 496 | | |
| 422 | | | 447 | | | 472 | | | 497 | | |
| 423 | | | 448 | | | 473 | | | 498 | | |
| 424 | | | 449 | | | 474 | | | 499 | | |
| 425 | | | 450 | | | 475 | 4 | 4 | 500 | | |

## 1972-77 EMPLOYMENT NEEDS BY OCCUPATION

THIS REPORT, BASED ON THE INFORMATION OBTAINED FROM THE BUSINESS SURVEY, SHOWS THE PROCESS BY WHICH TOTAL FIVE-YEAR EMPLOYMENT NEED IS DETERMINED FOR EACH OCCUPATION. THE PROCESS USED FOR OBTAINING THE INFORMATION SHOWN IN EACH COLUMN IS AS FOLLOWS:

COLUMN 1 - A STANDARD DEFINITION FOR EACH OCCUPATION IS OBTAINED FROM THE DICTIONARY OF OCCUPATIONAL TITLES.[1] A SUMMARIZATION OF THE DEFINITION FOR EACH OCCUPATION IS SHOWN IN THE APPENDIX, PAGES F-3 -- F-24.

COLUMN 2 - THE JOB TITLES ARE OBTAINED FROM THE BUSINESS AND INDUSTRY SURVEY AND CONSIST OF THOSE TITLES PRINTED ON THE SURVEY FORM AND OF THOSE WRITTEN IN ON THE FORM IN THE SPACES PROVIDED (SIMILAR TITLES "WRITTEN IN" HAVE BEEN COMBINED WHEN D.O.T. DEFINITIONS INDICATE THAT THEY ARE SYNONYMOUS).

COLUMN 3 - THE 1972 EMPLOYMENT FIGURE FOR EACH OCCUPATION IS OBTAINED BY ADDING THE TOTAL 1972 EMPLOYMENT LISTED AT THE TOP OF THE MAIL SURVEY TABULATION SHEET FOR THAT OCCUPATION TO THE 1972 EMPLOYMENT FIGURE LISTED ON THE PHONE SURVEY TABULATION SHEET FOR THAT OCCUPATION.

COLUMN 4 - THE 1977 EMPLOYMENT FIGURE FOR EACH OCCUPATION IS OBTAINED BY ADDING THE TOTAL 1977 EMPLOYMENT LISTED AT THE TOP OF THE MAIL SURVEY TABULATION SHEET FOR THAT OCCUPATION TO THE 1977 EMPLOYMENT FIGURE LISTED ON THE PHONE SURVEY TABULATION SHEET FOR THAT OCCUPATION.

COLUMN 5 - THE GROWTH FIGURE, REPRESENTING A 5-YEAR GROWTH PROJECTION, FOR EACH OCCUPATION IS OBTAINED BY SUBTRACTING THE 1972 EMPLOYMENT FIGURE FROM THE (PROJECTED) 1977 EMPLOYMENT FIGURE FOR THAT OCCUPATION.

COLUMN 6 - THE AVERAGE REPLACEMENT RATE (REPRESENTING THE ANNUAL REPLACEMENT RATE) IS DETERMINED BY USE OF FORMULAS DERIVED FROM NORTH CAROLINA MANPOWER NEEDS BY INDUSTRY AND OCCUPATIONS TO 1975.[2] FOR AN EXPLANATION OF THE APPLICATION OF THESE FORMULAS, SEE PAGE B-3 IN THE APPENDIX OF THIS MANUAL.

COLUMN 7 - THE 5-YEAR REPLACEMENT FIGURE IS OBTAINED BY MULTIPLYING THE ANNUAL REPLACEMENT RATE FOR EACH OCCUPATION (COL. 6) BY THE AVERAGE OF COLUMNS 3 AND 4 AND THEN MULTIPLYING BY FIVE. (SEE STEP NO. 2, PAGE B-3 IN APPENDIX).

COUMMN 8 - THE TOTAL 5-YEAR EMPLOYMENT NEED IS OBTAINED BY ADDING THE 5-YEAR REPLACEMENT FIGURE FOR EACH OCCUPATION (COL. 7) TO THE PROJECTED GROWTH FIGURE FOR THAT OCCUPATION (COL. 5).

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[1] Dictionary of Occupational Titles, Vol. 1: Definitions of Titles, 3rd Edition. Washington, D.C.: U.S. Department of Labor, Manpower Administration, Bureau of Employment Security, 1965.

[2] North Carolina Manpower Needs by Industry and Occupation to 1975. Raleigh, N.C.: Employment Security Commission of North Carolina, 1971.

## 1972-77 EMPLOYMENT NEEDS BY OCCUPATION

| Col. 1<br>D.O.T. | Col. 2<br>OCCUPATION | Col. 3<br>EMPLOY. 1972 | Col. 4<br>EMPLOY. 1977 | Col. 5<br>GROWTH | Col. 6<br>ANNUAL REPL. RATE | Col. 7<br>5-YEAR REPL. | Col. 8<br>TOTAL 5-YEAR EMPLOY. NEED |
|---|---|---|---|---|---|---|---|
| | A. SERVICE | | | | | | |
| 330.371 | Barber | 56 | 80 | 24 | 3.10% | 11 | 35 |
| 332.271 | Beautician & Cosmetician | 364 | 476 | 112 | 3.10 | 65 | 166 |
| | Counselor | | | | | | |
| 166.268 | Employment Counselor | 168 | 320 | 152 | 3.10 | 38 | 190 |
| 166.268 | Personnel Counselor | 21 | 26 | 5 | 3.10 | 3 | 8 |
| 237.168 | Travel Counselor | 64 | 72 | 8 | 3.10 | 11 | 19 |
| 012.188 | Fire Service Worker | 188 | 214 | 26 | .97 | 10 | 36 |
| 311.878* | Food Service Worker | 1183 | 1549 | 366 | 3.38 | 231 | 597 |
| Any Ind. | Foreman, Non-Working | 78 | 106 | 28 | 3.10 | 14 | 42 |
| | Law Enforcement | | | | | | |
| 375.268 | Police Occupations | 266 | 281 | 15 | 1.40 | 19 | 34 |
| 372.868 | Security Service Worker | 157 | 186 | 29 | 3.72 | 32 | 61 |
| | Medical Worker | | | | | | |
| 355.878 | Hospital Attendant | 41 | 48 | 7 | 4.28 | 10 | 17 |
| 354.878 | Nurse, Practical & PBT | 432 | 520 | 88 | 5.08 | 121 | 209 |
| 355.878 | Nursing Assistant | 362 | 410 | 48 | 4.28 | 83 | 131 |
| | B. MAINTENANCE, CONSTRUCTION, AND REPAIR | | | | | | |
| 861.381 | Brickmason | 84 | 218 | 134 | 1.18 | 9 | 143 |
| 860.381 | Carpenter | 1010 | 1829 | 819 | 2.05 | 145 | 964 |
| 844.884 | Concrete Finisher | 96 | 160 | 64 | 3.48 | 22 | 86 |
| 824.281 | Electrician | 402 | 569 | 167 | .51 | 12 | 179 |

* D.O.T. Number is for waitress, which occurred most frequently in Food Service Worker responses.

## 1972-77 EMPLOYMENT NEEDS BY OCCUPATION

| Col. 1<br>D.O.T. | Col. 2<br>OCCUPATION | Col. 3<br>EMPLOY. 1972 | Col. 4<br>EMPLOY. 1977 | Col. 5<br>GROWTH | Col. 6<br>ANNUAL REPL. RATE | Col. 7<br>5-YEAR REPL. | Col. 8<br>TOTAL 5-YEAR EMPLOY. NEED |
|---|---|---|---|---|---|---|---|
| | Foreman, Non-Working | 341 | 413 | 72 | 1.72% | 32 | 104 |
| 407.884 | Groundskeeper | 144 | 144 | 0 | 2.53 | 18 | 18 |
| 863.884 | Insulationist | 80 | 80 | 0 | 1.26 | 5 | 5 |
| 600.280 | Machinist, Maintenance | 412 | 512 | 100 | 1.35 | 31 | 131 |
| 899.281 | Maintenance Man, General Utility | 320 | 363 | 43 | 2.53 | 43 | 86 |
| | Mechanic, Except Motor Vehicle | | | | | | |
| 637.281 | Heating and Air Conditioning Mechanic | 167 | 408 | 241 | 1.36 | 20 | 261 |
| 638.281 | Maintenance Mechanic | 887 | 990 | 103 | 1.36 | 64 | 167 |
| 633.281 | Office Machines Mechanic | 108 | 135 | 27 | 1.41 | 9 | 36 |
| 721.281 | Small Motor Mechanic | 144 | 176 | 32 | 1.36 | 11 | 43 |
| | Mechanic, Motor Vehicle | | | | | | |
| 299.387 | Appraiser | 8 | 24 | 16 | 1.36 | 1 | 17 |
| 602.281 | Automotive Mechanic | 604 | 795 | 191 | 1.02 | 36 | 227 |
| 807.381 | Auto. Body Repairman | 119 | 156 | 37 | 1.36 | 9 | 46 |
| 625.281 | Diesel Mechanic | 444 | 524 | 80 | 1.02 | 25 | 105 |
| 807.287 | Service Writer | 16 | 16 | 0 | 1.36 | 1 | 1 |
| 620.281 | Transmission Specialist | 32 | 96 | 64 | 1.02 | 3 | 67 |
| 638.281 | Millwright | 41 | 42 | 1 | 1.11 | 2 | 3 |
| 806.884 | Mobile Homes & Campers Worker | 93 | 173 | 80 | 1.22 | 8 | 88 |
| 862.281 | Oil Burner Man | 48 | 48 | 0 | 1.36 | 3 | 3 |
| 840.884 | Painter | 284 | 373 | 89 | 1.95 | 32 | 121 |
| 862.381 | Plumber and/or Pipefitter | 418 | 627 | 209 | 1.32 | 34 | 243 |
| | Repairman | | | | | | |
| 710.281 | Instrument Repairman | 32 | 56 | 24 | 1.36 | 3 | 27 |

## 1972-77 EMPLOYMENT NEEDS BY OCCUPATION

| Col. 1 B.O.T. | Col. 2 OCCUPATION | Col. 3 EMPLOY. 1972 | Col. 4 EMPLOY. 1977 | Col. 5 GROWTH | Col. 6 ANNUAL REPL. RATE | Col. 7 5-YEAR REPL. | Col. 8 TOTAL 5-YEAR EMPLOY. NEED |
|---|---|---|---|---|---|---|---|
| 710.281 | Radio and TV Repairman | 39 | 53 | 14 | .75% | 2 | 16 |
| 365.381 | Shoe Repairman | 16 | 32 | 16 | 1.36 | 2 | 18 |
| 741.887 | Sander | 8 | 8 | 0 | 1.24 | 1 | 1 |
| 804.281 | Sheet Metal Worker | 301 | 609 | 308 | .91 | 21 | 329 |
| 950.782 | Stationary Engineer | 73 | 74 | 1 | .97 | 4 | 5 |
| 601.280 | Tool and Die Maker | 23 | 29 | 6 | .91 | 1 | 7 |
| 841.781 | Wallpaperer, etc. | 396 | 461 | 65 | 1.95 | 42 | 107 |
| 816.884 | Welder, Flamecutter | 356 | 539 | 183 | .82 | 18 | 201 |
| | C. MANAGERS | | | | | | |
| | Manager | | | | | | |
| | Assistant Manager | 368 | 560 | 192 | 1.93 | 45 | 237 |
| 183.118 | Branch Manager | 343 | 519 | 176 | 1.93 | 42 | 218 |
| 168.168 | Credit Manager | 24 | 46 | 22 | 1.63 | 3 | 25 |
| | Department Manager | | | | | | |
| 164.118 | Advertising | 55 | 62 | 7 | 1.93 | 6 | 13 |
| 219.388 | Budget | 70 | 102 | 32 | 1.93 | 8 | 40 |
| | Miscellaneous | 104 | 104 | 0 | 1.93 | 10 | 10 |
| 166.118 | Personnel and Training | 443 | 529 | 86 | 1.93 | 47 | 133 |
| 165.068 | Public Relations | 12 | 12 | 0 | 1.93 | 1 | .1 |
| 162.158 | Purchasing | 95 | 109 | 14 | 2.00 | 11 | 25 |
| 162.118 | Sales and Distribution | 257 | 398 | 141 | 1.93 | 32 | 173 |
| 189.118 | General Manager | 864 | 1048 | 184 | 1.93 | 92 | 276 |
| 981.138 | Maintenance Manager | 40 | 72 | 32 | 1.93 | 5 | 37 |
| 169.168 | Office Manager | 59 | 76 | 17 | 1.93 | 7 | 24 |
| | Plant Manager | 166 | 196 | 30 | 1.93 | 17 | 47 |
| 187.168 | Resident Manager | 8 | 16 | 8 | 1.93 | 1 | 9 |

## 1972-77 EMPLOYMENT NEEDS BY OCCUPATION

| Col. 1 | Col. 2 | Col. 3 | Col. 4 | Col. 5 | Col. 6 | Col. 7 | Col. 8 |
|---|---|---|---|---|---|---|---|
| D.O.T. | OCCUPATION | EMPLOY. 1972 | EMPLOY. 1977 | GROWTH | ANNUAL REPL. RATE | 5-YEAR REPL. | TOTAL 5-YEAR EMPLOY. NEED |
| 186.288 | Mortgage and Loan Officer | 87 | 173 | 86 | 2.32% | 15 | 101 |
| 197.168 | Superintendent | 72 | 120 | 48 | 1.93 | 9 | 57 |
|  | Supervisor | 232 | 360 | 128 | 1.93 | 29 | 157 |
|  | Supervisor/Section Leader | 23 | 23 | 0 | 1.93 | 2 | 2 |
|  | D. TECHNICAL |  |  |  |  |  |  |
| 141.081 | Commercial Artist | 16 | 40 | 24 | 2.55 | 4 | 28 |
| 152.088 | Composer | 1 | 1 | 0 | 2.55 | 0 | 0 |
| 973.381 | Compositor | 32 | 56 | 24 | 1.22 | 3 | 27 |
|  | Computer Programmer |  |  |  |  |  |  |
| 020.188 | Business | 69 | 106 | 37 | .36 | 1 | 38 |
| 020.188 | Scientific and Technical | 14 | 22 | 8 | .36 | 0 | 8 |
|  | Custom Design Engineer | 8 | 16 | 8 | 1.92 | 1 | 9 |
| 142.051 | Decorator, Interior | 11 | 12 | 1 | 1.92 | 1 | 2 |
| 079.378 | Dental Assistant | 24 | 40 | 16 | 3.91 | 6 | 22 |
| 142.051 | Designer, Interior | 12 | 13 | 1 | 1.92 | 1 | 2 |
|  | Draftsman |  |  |  |  |  |  |
| 001.281 | Building Trades | 111 | 137 | 26 | .78 | 5 | 31 |
| 007.281 | Mechanical | 103 | 156 | 53 | .78 | 5 | 58 |
| 160.288 | Estimator | 14 | 18 | 4 | 2.55 | 2 | 6 |
| 187.168 | Funeral Director, Embalmer | 336 | 360 | 24 | 2.55 | 44 | 68 |
| 079.368 | Inhalation Therapist | 72 | 144 | 72 | 3.91 | 21 | 93 |

## 1972-77 EMPLOYMENT NEEDS BY OCCUPATION

| Col. 1 D.O.T. | Col. 2 OCCUPATION | Col. 3 EMPLOY. 1972 | Col. 4 EMPLOY. 1977 | Col. 5 GROWTH | Col. 6 ANNUAL REPL. RATE | Col. 7 5-YEAR REPL. | Col. 8 TOTAL 5-YEAR EMPLOY. NEED |
|---|---|---|---|---|---|---|---|
|  | Mass Media - T.V., Radio, Newspaper, Advertising | 106 | 187 | 81 | 2.55% | 19 | 100 |
|  | Printing Trades, not elsewhere listed | 229 | 252 | 23 | 1.10 | 13 | 36 |
| 075.378 | Registered Nurse | 512 | 603 | 91 | 4.40 | 123 | 214 |
| 018.188 | Surveyor | 41 | 41 | 0 | .48 | 1 | 1 |
|  | Technician |  |  |  |  |  |  |
| 001.281 | Architectural Technician | 11 | 28 | 17 | .48 | 0 | 17 |
| 002.281 | Chemical Technician | 49 | 51 | 2 | .36 | 1 | 3 |
| 141.081 | Commercial Graphics Technician | 51 | 76 | 25 | .36 | 1 | 26 |
| 712.381 | Dental Technician | 32 | 48 | 16 | 4.02 | 8 | 24 |
| 003.181 | Electrical & Electronics Tech. | 86 | 110 | 24 | .36 | 2 | 26 |
| 003.181 | Electronics Technician | 80 | 98 | 18 | .36 | 2 | 20 |
|  | Engineering Technician |  |  |  |  |  |  |
| 005.081 | Civil | 71 | 84 | 13 | 1.96 | 8 | 21 |
| 003.081 | Electrical | 36 | 54 | 18 | .67 | 3 | 21 |
| 003.281 | Environmental | 2 | 6 | 4 | .97 | 0 | 4 |
| 007.081 | Mechanical | 35 | 47 | 12 | 1.30 | 3 | 15 |
| 012.081 | Safety | 21 | 26 | 5 | .97 | 1 | 6 |
| 976.381 | Film Technician | 24 | 56 | 32 | .36 | 1 | 33 |
| 319. | Food Processing Technician | 45 | 61 | 16 | .36 | 1 | 17 |
| 142. | Interior Design Technician | 1 | 1 | 0 | 1.92 | 0 | 0 |
|  | Marine Technician | 0 | 0 | 0 | .36 | 0 | 0 |
| 078.381 | Medical Technician | 18 | 22 | 4 | 4.02 | 4 | 8 |
| 199.381 | Non-Destructive Technician | 4 | 10 | 6 | .36 | 0 | 6 |
| 079.378 | Operating Room Technician | 4 | 10 | 6 | 3.91 | 1 | 7 |
| 040.081 | Ornamental Horticulture Tech. | 57 | 90 | 33 | 2.55 | 9 | 42 |
| 078.381 | Science (Lab) Technician | 12 | 24 | 12 | 3.91 | 4 | 16 |

## 1972-77 EMPLOYMENT NEEDS BY OCCUPATION

| Col. 1<br>D.O.T. | Col. 2<br>OCCUPATION | Col. 3<br>EMPLOY. 1972 | Col. 4<br>EMPLOY. 1977 | Col. 5<br>GROWTH | Col. 6<br>ANNUAL REPL. RATE | Col. 7<br>5-YEAR REPL. | Col. 8<br>TOTAL 5-YEAR EMPLOY. NEED |
|---|---|---|---|---|---|---|---|
|  | E. SALES |  |  |  |  |  |  |
| 280.358 | Distributor & Dealer | 88 | 136 | 48 | 2.64 | 15 | 63 |
| 280.358 | Salesman | 6267 | 7942 | 1675 | 2.64 | 938 | 2613 |
|  | F. CLERICAL |  |  |  |  |  |  |
| 160.188 | Accountant | 8 | 24 | 16 | 2.13 | 2 | 18 |
| 210.388 | Bookkeeper | 339 | 511 | 112 | 4.25 | 97 | 209 |
| 211.468 | Cashier | 100 | 124 | 24 | 4.02 | 23 | 47 |
|  | Clerk |  |  |  |  |  |  |
| 219.488 | Accounting Clerk | 557 | 733 | 176 | 4.18 | 135 | 311 |
| 219.388 | Administrative Clerk | 8 | 8 | 0 | 3.22 | 1 | 1 |
| 206.388 | File Clerk | 157 | 197 | 40 | 3.22 | 32 | 72 |
| 209.388 | General Clerk | 1515 | 1694 | 179 | 3.22 | 258 | 437 |
| 223.388 | Inventory Clerk | 57 | 65 | 7 | 3.22 | 10 | 17 |
| 215.488 | Payroll/Timekeeping Clerk | 137 | 166 | 29 | 3.22 | 24 | 53 |
| 205.268 | Personnel Clerk | 79 | 111 | 32 | 3.22 | 15 | 47 |
| 221.388 | Production Clerk | 80 | 103 | 23 | 3.22 | 15 | 38 |
| 222.387 | Shipping & Receiving Clerk | 321 | 429 | 108 | 1.59 | 30 | 138 |
| 223.387 | Stock Clerk | 359 | 470 | 110 | 3.22 | 67 | 177 |
|  | Traffic Rate Clerk | 30 | 40 | 10 | 3.22 | 6 | 16 |
| 240.388 | Collector and Adjuster | 150 | 189 | 39 | 3.22 | 27 | 66 |
| 132.088 | Copywriter | 8 | 16 | 8 | 3.22 | 2 | 10 |
|  | Data Processer | 3 | 3 | 0 | 3.22 | 0 | 0 |
|  | Operator |  |  |  |  |  |  |
| 213.382 | Computer Operator | 105 | 141 | 36 | 3.22 | 20 | 56 |
| 213.582 | Key Punch Operator | 24 | 28 | 4 | 3.22 | 4 | 8 |

## 1972-77 EMPLOYMENT NEEDS BY OCCUPATION

| Col. 1 D.O.T. | Col. 2 OCCUPATION | Col. 3 EMPLOY. 1972 | Col. 4 EMPLOY. 1977 | Col. 5 GROWTH | Col. 6 ANNUAL REPL. RATE | Col. 7 5-YEAR REPL. | Col. 8 TOTAL 5-YEAR EMPLOY. NEED |
|---|---|---|---|---|---|---|---|
| 207. | Office Machine Operator | 101 | 117 | 16 | 3.50% | 19 | 35 |
| 213.382 | Peripheral EDP Equipment Op. | 18 | 33 | 15 | 3.50 | 4 | 19 |
| 235.862 | Switchboard Operator | 125 | 143 | 18 | 4.68 | 31 | 49 |
| 203.588 | Teletype Operator | 14 | 14 | 0 | 3.22 | 2 | 2 |
| 209.688 | Proofreader | 26 | 34 | 8 | 3.22 | 5 | 13 |
| 237.368 | Receptionist | 1569 | 1833 | 264 | 3.22 | 274 | 538 |
|  | Secretary |  |  |  |  |  |  |
| 201.368 | Executive & General Secretary | 1912 | 2671 | 759 | 4.83 | 553 | 1312 |
| 201.368 | Legal Secretary | 104 | 154 | 50 | 4.83 | 31 | 81 |
| 201.368 | Medical Secretary | 80 | 82 | 2 | 4.83 | 20 | 22 |
| 202.388 | Stenographer | 543 | 617 | 74 | 4.83 | 140 | 214 |
| 212.368 | Teller | 193 | 295 | 102 | 4.04 | 49 | 151 |
| 919.368 | Ticket Agent | 8 | 8 | 0 | 3.22 | 1 | 1 |
|  | G. PRODUCTION |  |  |  |  |  |  |
| 905.883 | Driver | 3331 | 3553 | 222 | .90 | 155 | 377 |
|  | Foreman, Non-Working | 822 | 884 | 62 | 2.14 | 91 | 153 |

# CHAPTER III

# STUDENT FOLLOW-UP

## Rationale

The "output" of an institution is the students who leave it--the graduates, the "ELMS" (Early Leavers with Marketable Skills), and its early dropouts. In evaluating the effectiveness of the institution in matching its training programs to the demands of the labor market, it is necessary to measure the total "output" of the institution. This measurement should be made by a follow-up method designed to determine several factors, including: the placement of the former student within the labor force, his success as measured by salary, and his evaluation of the relationship of the institution's training program to his success on the job. The follow-up form shown on page 51 was designed to yield this information in a concise manner, with little effort on the part of the student--questions are few, instructions are kept to a minimum, and no return envelope is required.

## A SYSTEM FOR FOLLOW-UP OF GRADUATES AND ELMS

1. A RECORD OF ENROLLMENT AND ATTRITION IS KEPT AS AN INFORMATION BASE FOR THE FOLLOW-UP. (WHEN KEPT BY THE REGISTRAR, THIS RECORD MAY ALSO BE USEFUL FOR COMPLETING THE VARIOUS ENROLLMENT AND ATTENDANCE REPORTS REQUIRED OF HIS OFFICE.)

2. THE NAME, ADDRESS, AND SOCIAL SECURITY NUMBER FOR EACH REGISTRANT ARE RECORDED IN THE APPROPRIATE COLUMNS.

3. AS EACH REGISTERED STUDENT LEAVES THE INSTITUTION, DUE EITHER TO GRADUATION OR WITHDRAWAL, THE DATE AND REASON FOR LEAVING ARE RECORDED IN THE APPROPRIATE COLUMNS. (FOR WITHDRAWALS, THE REASON FOR LEAVING IS LISTED BY NUMBER AND THE NUMBER OF QUARTERS COMPLETED IS RECORDED IN THE APPROPRIATE COLUMN.)

4. SINCE A CHANGE OF CURRICULUM IS CONSIDERED A "WITHDRAWAL" FROM THE FORMER CURRICULUM, EACH CURRICULUM CHANGE IS RECORDED ON THE RECORD-OF-ENROLLMENT SHEET IN THE "CURRICULUM CHANGE" COLUMN BY ENTERING THE NUMBER OF THE NEW CURRICULUM. THE STUDENT'S NAME SHOULD THEN BE LISTED UNDER THE NEW CURRICULUM ON THE RECORD OF ENROLLMENT FOR THE FOLLOWING QUARTER.

5. THE GRADUATES OF EACH CLASS AND THE ELMS WHO LEFT THE INSTITUTION DURING THAT CLASS YEAR ARE SURVEYED AT LEAST SIX MONTHS AFTER THE OFFICIAL GRADUATION DATE.

6. THE INFORMATION OBTAINED FROM THE FOLLOW-UP SURVEY IS CONFIDENTIAL; THEREFORE, THE NAMES, ADDRESSES, AND SOCIAL SECURITY NUMBERS SHOWN ON THE FOLLOWING REPORT ARE FICTITIOUS.

## RECORD OF ENROLLMENT AND ATTRITION

| | | |
|---|---|---|
| Air Conditioning & Refrigeration | Spring, 1971 | 5-31-71 |
| Curriculum | Quarter | Date |

| Col. 1 | Col. 2 | Col. 3 | Col. 4 | | Col. 5 | Col. 6 |
|---|---|---|---|---|---|---|
| NAME | ADDRESS | Soc. Sec. No. | Termination | | Quarters Completed | Curriculum Change |
| | | | Date | Codes | | |
| Adams, James M. | Route 2<br>Pfafftown, NC 27040 | 237-84-9453 | | 100 | | |
| Benton, Stanley M. | Route 1, Box 208<br>Clemmons, NC 27012 | 236-41-8943 | | | | |
| Cloud, Henry V. | Route 3, Box 111<br>Winston-Salem, NC 27191 | 244-76-1027 | | 100 | | |
| Crumpler, Charles T. | Route 1, Box 700<br>Germanton, NC 27019 | 246-48-1921 | | | | |
| Davidson, Harvey B. | 3000 Cherry Street<br>Winston-Salem, NC 27101 | 238-77-6593 | | | | Winter Qtr. T-043 |
| Gabriel, Robert S. | 781 Waughtown Street<br>Winston-Salem, NC 27107 | 242-53-4953 | 3-27-71 | 508 | 2 | |
| Hart, William L. | 2206 Ivy Street<br>Winston-Salem, NC 27107 | 244-03-0313 | | | | |
| Jackson, Michael R. | 611 N. Main Street<br>Kernersville, NC 27284 | 238-66-6492 | | | | |
| Jenkins, Ronnie M. | 1041 Apple Street<br>Winston-Salem, NC 27101 | 248-34-8019 | 3-17-71 | 511 | 2 | |
| Jones, John J. | 800 Miller Street<br>Winston-Salem, NC 27103 | 237-71-1825 | | | | |
| Lockard, Gerald M. | 901 West Street<br>Winston-Salem, NC 27104 | 248-85-9810 | | 100 | | |

(NAMES AND ADDRESSES ARE FICTITIOUS)

# RECORD OF ENROLLMENT AND ATTRITION

**Air Conditioning & Refrigeration** — Curriculum | Spring, 1971 — Quarter | 5-31-71 — Date

| Col. 1 | Col. 2 | Col. 3 | Col. 4 | | Col. 5 | Col. 6 |
|---|---|---|---|---|---|---|
| | | | Termination | | Quarters Completed | Curriculum Change |
| NAME | ADDRESS | Soc. Sec. No. | Date | Codes | | |
| Loman, Benjamin | 104 Sanford Street<br>Winston-Salem, NC 27101 | 239-91-2033 | | 100 | | |
| Lyles, Stephen R. | 401 W. 14th Street<br>Winston-Salem, NC 27102 | 237-77-2011 | | | | Winter Qtr. V-017 |
| McKinney, Frank R. | 3410 Brewer Avenue<br>Clemmons, NC 27012 | 239-85-0414 | 3-21-71 | 503 | 2 | |
| Myers, David C. | 2501 Miller Street<br>Winston-Salem, NC 27101 | | | 100 | | |
| Neal, Marion R. | 701 30th Street<br>Winston-Salem, NC 27102 | 245-28-1761 | 3-22-71 | | | V-022 |
| Phillips, Joel | 204 Dalewood Drive<br>Winston-Salem, NC 27102 | 237-84-6710 | 2-26-71 | 503 | 1 | |
| Proctor, Donald E. | 4800 Daniel Street<br>Greensboro, NC 27401 | 236-81-4500 | | | | |
| Pulliam, Michael | 1106 Marlborough Lane<br>King, NC 27021 | 239-75-4676 | 3-20-71 | 511 | 2 | |
| Reavis, Timothy M. | 408 Carolina Circle<br>Winston-Salem, NC 27101 | 243-80-8098 | | | | |
| Redding, George Robert | Route 1, Box 48<br>Lewisville, NC 27023 | 245-50-8081 | | 100 | | |
| Souther, Robert T. | Route 2, Box 124<br>Laurel Springs, NC 28644 | 244-80-4123 | | | | |

(NAMES AND ADDRESSES ARE FICTITIOUS)

# RECORD OF ENROLLMENT AND ATTRITION

Curriculum: Air Conditioning & Refrigeration
Quarter: Spring, 1971
Date: 5-31-71

| Col. 1<br>NAME | Col. 2<br>ADDRESS | Col. 3<br>Soc Sec. No. | Col. 4<br>Termination Date | Col. 4<br>Termination Codes | Col. 5<br>Quarters Completed | Col. 6<br>Curriculum Change |
|---|---|---|---|---|---|---|
| Stinson, Nathaniel B. | 201 Oakdale Drive<br>Winston-Salem, NC 27105 | 237-54-3031 | | 100 | | |
| Swanson, Bernard R. | Route 3<br>Pfafftown, NC 27040 | 246-44-4722 | | | | |
| Thomas, Maynard F. | Route 1, Box 201<br>Kernersville, NC 27284 | 244-80-1414 | | | | |
| Tomlinson, Richard M. | 1201 Chestnut Street<br>Winston-Salem, NC 27105 | 243-64-7738 | 2-21-71 | 501 | 2 | |
| Tyson, James R. | 111 Baux Mountain Road<br>Germanton, NC 27019 | 243-53-7648 | | | | |

(NAMES AND ADDRESSES ARE FICTITIOUS)

## THE SURVEY INSTRUMENT* FOR GRADUATES AND ELMS

1. THE SURVEY INSTRUMENT SHOWN ON THE FOLLOWING PAGE IS SENT TO EACH GRADUATE AND ELM WHOSE NAME APPEARS ON THE RECORD OF ENROLLMENT FOR THE PREVIOUS YEAR'S CLASS.

2. THE DATE, CURRICULUM NUMBER, NAME, SOCIAL SECURITY NUMBER, AND ADDRESS LINES ARE FILLED IN BY THE TYPIST FROM THE INFORMATION APPEARING ON THE RECORD OF ENROLLMENT (A "G" IS USED AFTER THE CURRICULUM NUMBER TO IDENTIFY GRADUATES AND AND "E" TO IDENTIFY ELMS).

3. MAILING LABELS, WHICH HAVE BEEN ADDRESSED BY TYPEWRITER, MAY BE USED TO FACILITATE ADDRESSING. THE FORMS ARE STAMPED IN THE APPROPRIATE PLACES WITH FIRST-CLASS POSTAGE EACH WAY. FORMS ARE THEN FOLDED TWICE AND SEALED BEFORE MAILING.

*AN ALTERNATE INSTRUMENT, DESIGNED FOR ENCLOSURE IN A RETURN ENVELOPE, IS SHOWN IN APPENDIX E-3. IT MAY BE USED BY INSTITUTIONS WISHING TO PREPARE THEIR OWN SURVEY FORMS AT A MINIMUM COST.

*Dear Former Student,*

*The staff of Forsyth Technical Institute is conducting a follow-up study of all students who left Forsyth Technical Institute during the past school year. We ask that you complete the questionnaire below and simply seal and mail it back to us. This information will be of great value to Forsyth Technical Institute in planning for future students. Your cooperation is appreciated.*

*Sincerely,*

Marcus D. Allred

*Marcus Allred, Director*
*Occupational Information Center*

(DETACH HERE) (DETACH HERE)

(SEAL HERE)

**CONFIDENTIAL**

**FORSYTH TECHNICAL INSTITUTE**
**STUDENT FOLLOW-UP**

**DATE** ____________
**CURRICULUM NO.** ________

**Name** ______________________ **Soc. Sec. No.** ____________
(Last) (First) (Middle)

**Address** ______________________
Number/Street City/State Zip Code

**Employer (Name of Company)** ______________________

**Company Address** ______________________
Number/Street City/State Zip Code

**Job Title** ______________________

**Approximate monthly salary** ____________ ________

**Did F.T.I. training help you in performing the above job? Yes** ________ **No** ________

**If not employed, what is your present status?** ______________________

______________________

**Any comments you wish to make:** ______________________

______________________

______________________

## COMPILATION OF SURVEY DATA

1. THE RECORD-OF-ENROLLMENT SHEETS FOR THE ENTIRE YEAR ARE ASSEMBLED, BY CURRICULUM, AND THE NAMES OF GRADUATES AND OF ELMS ARE TYPED SEPARATELY, BY CURRICULUM, ONTO COMPILATION FORMS SUCH AS THAT SHOWN ON THE FOLLOWING PAGE.

2. AS FOLLOW-UP SURVEY FORMS ARE RECEIVED, THE INFORMATION IS COMPILED IN THE MANNER SHOWN.* WHEN ALL REPLIES HAVE BEEN TABULATED (ALLOWING APPROXIMATELY THREE WEEKS FOR RETURNS), NON-RESPONDENTS ARE SENT A SECOND SURVEY FORM. INFORMATION RECEIVED FROM THIS SURVEY IS ALSO ADDED TO THE COMPILATION FORM. NON-RESPONDENTS AFTER THIS SECOND MAILING MAY BE SENT A THIRD SURVEY FORM OR CONTACTED BY PHONE.

*THE NAMES AND OTHER INFORMATION SHOWN ON THE FOLLOWING SAMPLE FORM ARE FICTITIOUS.

## WORKSHEET FOR STUDENT FOLLOW-UP

GRADUATES, 1971

AIR CONDITIONING AND REFRIGERATION V-024

| Col 1<br>NAME | Col. 2<br>COMPANY | Col. 3<br>JOB TITLE | Col. 4<br>MONTHLY SALARY | Col. 5<br>WAS TRAINING USEFUL | Col. 6<br>COMMENTS |
|---|---|---|---|---|---|
| Adams, James M. | Watkins' Garage | Diesel Mechanic | $420 | Yes | |
| Brown, Clyde N. | | | | | |
| Cloud, Henry V. | Minute Grocery | General Manager | $450 | No | |
| Day, Glenn A. | Artie's Appliance | Service Technician | $510 | Yes | Excellent course |
| Howard, Thomas R. | | | | | |
| Johnson, Jeremiah | Piedmont Hosiery | Material Handler | $550 | No | School should help studen find jobs in their field. |
| Lockard, Gerald M. | | | | | |
| Loman, Benjamin D. | | | | | |
| Myers, David C. | ABC Air Conditioning | Service Technician | $492 | Yes | Course needs more practic experience. |
| Norman, Joel B. | | | | | |
| Porter, William R. | | | | | |
| Ready, Jim S. | Wrenn Air Cond. & Htg. | Service Technician | (not given) | Yes | |
| Redding, George P. | TV Discount Company | Counter Salesman | $520 | No | |
| Stinson, Nathaniel B. | R & N Appliance | Service Technician | $500 | Yes | |
| Taylor, Lee F. | | | | | |
| Tugman, Robert V. | Southern Railway | RR Yard Conductor | (not given) | No | Instructors were helpful. |

(NAMES ARE FICTITIOUS)

## WORKSHEET FOR STUDENT FOLLOW-UP

GRADUATES, 1971

## AIR CONDITIONING AND REFRIGERATION V-024 (continued)

| Col. 1<br>NAME | Col. 2<br>COMPANY | Col. 3<br>JOB TITLE | Col. 4<br>MONTHLY SALARY | Col. 5<br>WAS TRAINING USEFUL | COMMENTS |
|---|---|---|---|---|---|
| Vernon, John E. | | | | | |
| Wagstaff, Ed | Unlocated - unknown address | | | | |
| Yarby, Harold | | | | | |

(NAMES ARE FICTITIOUS)

## WORKSHEET FOR STUDENT FOLLOW-UP

## AIR CONDITIONING AND REFRIGERATION V-024

(NAMES ARE FICTITIOUS)

| NAME | Col. 2 COMPANY | Col. 3 JOB TITLE | Col. 4 MONTHLY SALARY | Col. 5 WAS TRAINING USEFUL | COMMENTS |
|---|---|---|---|---|---|
| Allman, Mark O. | | | | | |
| Benton, Roy E. | | | | | |
| Deal, Harry C. | Unlocated - unknown address | | | | |
| Evans, Randy S. | | | | | |
| Gabriel, Robert S. | U.S. Post Office | Postal Clerk | $625 | Yes | |
| Holt, Gene R. | | | | | |
| Huffman, Adam S. | Student in another curriculum | | | | |
| Ingram, Jack A. | | | | | |
| Jenkins, Ronnie M. | Adams Appliance | Service Technician | $540 | Yes | Grateful to your school for the training I received. |
| Kirk, Tony P. | | | | | |
| McKinney, Frank R. | U.S. Post Office | Postal Clerk | $650 | No | |
| Osborne, Phillip W. | | | | | |
| Phillips, Joel | Phillips Trucking Co. | Dock Worker | $610 | No | Plan to return for welding course. |
| Pulliam, Michael | | | | | |
| Seitz, Elston L. | | | | | |
| Southern, Joseph P. | U.S. ARMY | | | | |

# WORKSHEET FOR STUDENT FOLLOW-UP

ELMS 1971

## AIR CONDITIONING AND REFRIGERATION V-024 (continued)

| Col. 1<br>NAME | Col. 2<br>COMPANY | Col. 3<br>JOB TITLE | Col. 4<br>MONTHLY SALARY | Col. 5<br>WAS TRAINING USEFUL | Col. 6<br>COMMENTS |
|---|---|---|---|---|---|
| Tate, Bill J. | | | | | |
| Tomlinson, Richard M. | Ramco Corporation | Machine Operator | $460 | Yes | Would like to find a bet job. |
| Vance, Bradley N. | | | | | |
| Youmans, Ronald F. | Unemployed | | | | |

(NAMES ARE FICTITIOUS)

## INSTITUTIONAL OUTPUT BY CURRICULUM

1. THE REPORT OF INSTITUTIONAL OUTPUT BY CURRICULUM IS OBTAINED FROM THE JOB TITLE COLUMNS OF THE PREVIOUS REPORT.

2. THE TOTAL OUTPUT FIGURE SHOULD EQUAL THE TOTAL REPLIES PLUS NON-RESPONDENTS. (IN COMPUTING RESPONSE PERCENTAGES, IT SHOULD BE KEPT IN MIND THAT SOME OF THE "NON-RESPONDENTS" DID NOT RECEIVE A SURVEY FORM DUE TO CHANGE OF ADDRESS.)

3. EACH JOB TITLE IS ASSIGNED A D.O.T. NUMBER (SEE COLUMN 1). CODING OCCUPATIONS TO D.O.T. CLASSIFICATIONS OFTEN REQUIRES VALUE JUDGMENTS, AS SOME TITLES REPORTED WILL DIFFER SLIGHTLY FROM THOSE LISTED IN THE DICTIONARY OF OCCUPATIONAL TITLES.[1] IN SOME CASES, NO D.O.T. NUMBER CAN BE ASSIGNED BECAUSE OF INSUFFICIENT INFORMATION REGARDING THE JOB TITLE.

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[1] Dictionary of Occupational Titles, Vol. 1: Definitions of Titles, 3rd Edition. Washington, D.C.: U.S. Department of Labor, Manpower Administration, Bureau of Employment Security, 1965.

## 1970-71 INSTITUTIONAL OUTPUT

Curriculum T-001
Agricultural Business Technology

| D.O.T. | JOB TITLE | GRADUATES | ELMS | TOTAL |
|---|---|---|---|---|
| 860.381 | Carpenter | 1 | 0 | 1 |
| | Salesman | 0 | 1 | 1 |
| TOTAL EMPLOYMENT | | 1 | 1 | 2 |
| NON-RESPONDENTS | | 0 | 0 | 0 |
| TOTAL OUTPUT: | | 1 | 1 | 2 |

(Curriculum Terminated 1971)

# 1970-71 INSTITUTIONAL OUTPUT

Curriculum T-041
Architectural Technology

| D.O.T. | JOB TITLE | GRADUATES | ELMS | TOTAL |
|---|---|---|---|---|
| 609.885 | Buffer | 0 | 1 | 1 |
| TOTAL EMPLOYMENT | | 0 | 1 | 1 |
| STUDENTS (4-YEAR SCHOOL) | | 0 | 1 | 1 |
| NON-RESPONDENTS | | 0 | 4 | 4 |
| TOTAL OUTPUT: | | New Curriculum<br>No Graduates | 6 | 6 |

## 1970-71 INSTITUTIONAL OUTPUT

Curriculum T-018
Business Administration

| D.O.T. | JOB TITLE | GRADUATES | ELMS | TOTAL |
|---|---|---|---|---|
| 160.188 | Accountant | 4 | 0 | 4 |
| 164.068 | Advertising Trainee | 1 | 0 | 1 |
| 153.228 | Assistant Pro | 0 | 1 | 1 |
| 210.388 | Bookkeeper | 2 | 0 | 2 |
| 219.338 | Budget Manager | 1 | 0 | 1 |
| 211.468 | Cashier | 0 | 1 | 1 |
| 375.268 | Deputy Sheriff | 0 | 1 | 1 |
| 298.081 | Display Trainee | 1 | 0 | 1 |
| 905.883 | Driver | 0 | 2 | 2 |
| 824.281 | Electrician | 0 | 1 | 1 |
| | Journalism | 0 | 1 | 1 |
| 862.884 | Laborer, Construction | 0 | 1 | 1 |
| 821.381 | Lineman | 0 | 1 | 1 |
| 699.887 | Machine Cleaner | 0 | 2 | 2 |
| 189.118 | Manager | 1 | 4 | 5 |
| 209.388 | Office Clerk | 0 | 1 | 1 |
| 215.488 | Payroll Statistician | 1 | 0 | 1 |
| 973.381 | Printer | 0 | 1 | 1 |
| 211.388 | Production Planning | 1 | 0 | 1 |
| | Proprietor | 0 | 1 | 1 |
| 290.478 | Sales Clerk | 0 | 1 | 1 |
| | Salesman | 0 | 1 | 1 |
| 201.368 | Secretary | 0 | 2 | 2 |

(Continued)

## 1970-71 INSTITUTIONAL OUTPUT

Curriculum T-018
Business Administration
(Continued)

| D.O.T. | JOB TITLE | GRADUATES | ELMS | TOTAL |
|---|---|---|---|---|
| 223.387 | Shipping & Receiving Clerk | 0 | 2 | 2 |
| 223.387 | Spare Parts Analyst | 0 | 1 | 1 |
| 741.884 | Sprayer | 0 | 1 | 1 |
| | Technical Operator | 0 | 4 | 4 |
| 215.488 | Timekeeper, Dispatcher | 1 | 0 | 1 |
| 559.885 | Tire Recapper | 0 | 1 | 1 |
| | Unspecified Job | 0 | 2 | 2 |
| TOTAL EMPLOYMENT | | 13 | 33 | 46 |
| UNEMPLOYED | | 0 | 1 | 1 |
| STUDENTS (4-YEAR SCHOOL) | | 1 | 1 | 2 |
| NON-RESPONDENTS | | 11 | 71 | 82 |
| TOTAL OUTPUT: | | 25 | 106 | 131 |

# 1970-71 INSTITUTIONAL OUTPUT

Curriculum T-022
Electronic Data Processing

| D.O.T. | JOB TITLE | GRADUATES | ELMS | TOTAL |
|---|---|---|---|---|
| 231.588 | U.S. Postal Clerk | 0 | 1 | 1 |
| TOTAL EMPLOYMENT | | 0 | 1 | 1 |
| STUDENTS (F.T.I.) | | 0 | 1 | 1 |
| NON-RESPONDENTS | | 0 | 11 | 11 |
| TOTAL OUTPUT: | | New Curriculum<br>No Graduates | 13 | 13 |

## 1970-71 INSTITUTIONAL OUTPUT

Curriculum T-045
Electronics Engineering Technology

| D.O.T. | JOB TITLE | GRADUATES | ELMS | TOTAL |
|---|---|---|---|---|
| 620.281 | Auto Mechanic | 0 | 1 | 1 |
| 824.281 | Electrician | 1 | 0 | 1 |
| 003.181 | Electronics Technician | 4 | 0 | 4 |
|  | Field Operations Specialist | 1 | 0 | 1 |
| 189.118 | Manager | 1 | 1 | 2 |
| 290.478 | Sales Clerk | 1 | 0 | 1 |
| 710.281 | TV Serviceman | 1 | 0 | 1 |
| TOTAL EMPLOYMENT |  | 9 | 2 | 11 |
| STUDENTS (4-YEAR SCHOOL) |  | 3 | 1 | 4 |
| NON-RESPONDENTS |  | 5 | 4 | 9 |
| TOTAL OUTPUT: |  | 17 | 7 | 24 |

## 1970-71 INSTITUTIONAL OUTPUT

Curriculum T-050
Manufacturing Engineering Technology

| D.O.T. | JOB TITLE | GRADUATES | ELMS | TOTAL |
|---|---|---|---|---|
| 312.878 | Bar Tender, Cook | 1 | 0 | 1 |
| 382.884 | Custodial Agent | 0 | 1 | 1 |
| 007.181 | Engineering Associate | 2 | 0 | 2 |
| 097.288 | Instructor | 1 | 0 | 1 |
| 078.381 | Lab Technician | 1 | 0 | 1 |
| 007.081 | Mechanical Engineer | 0 | 1 | 1 |
| | Packing Machine Operator | 0 | 1 | 1 |
| 062.158 | Plant Buyer | 1 | 0 | 1 |
| 609.684 | Quality Control | 0 | 1 | 1 |
| | Screening & Maintenance Supervisor | 1 | 0 | 1 |
| TOTAL EMPLOYMENT | | 7 | 4 | 11 |
| DECEASED | | 0 | 1 | 1 |
| UNEMPLOYED | | 1 | 0 | 1 |
| MILITARY | | 1 | 0 | 1 |
| NON-RESPONDENTS | | 5 | 4 | 9 |
| TOTAL OUTPUT: | | 14 | 9 | 23 |

## 1970-71 INSTITUTIONAL OUTPUT

Curriculum T-043
Mechanical Drafting & Design Technology

| D.O.T. | JOB TITLE | GRADUATES | ELMS | TOTAL |
|---|---|---|---|---|
| 007.281 | Draftsman | 1 | 0 | 1 |
| 007.181 | Engineering Clerk | 1 | 0 | 1 |
| 007.181 | Engineer's Aide | 1 | 0 | 1 |
| 223.387 | Parts Clerk | 1 | 0 | 1 |
| 120.108 | Pastor | 0 | 1 | 1 |
| 017.281 | Technical Illustrator | 1 | 0 | 1 |
| TOTAL EMPLOYMENT | | 5 | 1 | 6 |
| NON-RESPONDENTS | | 1 | 8 | 9 |
| TOTAL OUTPUT: | | 6 | 9 | 15 |

## 1970-71 INSTITUTIONAL OUTPUT

Curriculum T-009
Ornamental Horticulture Technology

| D.O.T. | JOB TITLE | GRADUATES | ELMS | TOTAL |
|---|---|---|---|---|
| 905.883 | Driver | 0 | 1 | 1 |
| 824.281 | Electrician | 0 | 1 | 1 |
| | Foreman | 0 | 1 | 1 |
| 040.081 | Horticulturist | 1 | 0 | 1 |
| 407.887 | Laborer, Landscaping | 0 | 1 | 1 |
| | Leaseman | 0 | 1 | 1 |
| 250.358 | Real Estate Broker | 0 | 1 | 1 |
| 222.387 | Receiving Clerk | 0 | 1 | 1 |
| 223.387 | Stock Clerk | 1 | 0 | 1 |
| 816.884 | Welder | 0 | 1 | 1 |
| | Unspecified Job | 0 | 1 | 1 |
| TOTAL EMPLOYMENT | | 2 | 9 | 11 |
| NON-RESPONDENTS | | 2 | 6 | 8 |
| TOTAL OUTPUT: | | 4 | 15 | 19 |

## 1970-71 INSTITUTIONAL OUTPUT

Curriculum T-030
Secretarial - Executive

| D.O.T. | JOB TITLE | GRADUATES | ELMS | TOTAL |
|---|---|---|---|---|
| 079.378 | Dental Assistant | 0 | 1 | 1 |
| 201.368 | Secretary | 5 | 4 | 9 |
| TOTAL EMPLOYMENT | | 5 | 5 | 10 |
| UNEMPLOYED | | 1 | 3 | 4 |
| NON-RESPONDENTS | | 0 | 22 | 22 |
| TOTAL OUTPUT: | | 6 | 30 | 36 |

# 1970-71 INSTITUTIONAL OUTPUT

## Curriculum V-024
## Air Conditioning & Refrigeration

| D.O.T. | JOB TITLE | GRADUATES | ELMS | TOTAL |
|---|---|---|---|---|
| 290.478 | Counter Salesman | 1 | 0 | 1 |
| 625.281 | Diesel Mechanic | 1 | 0 | 1 |
| 929.887 | Dock Worker | 0 | 1 | 1 |
| 189.118 | General Manager | 1 | 0 | 1 |
|  | Machine Operator | 0 | 1 | 1 |
| 929.887 | Material Handler | 1 | 0 | 1 |
| 231.281 | Postal Clerk | 0 | 2 | 2 |
| 910.138 | RR Yard Conductor | 1 | 0 | 1 |
| 637.281 | Service Technician | 4 | 1 | 5 |
| TOTAL EMPLOYMENT |  | 9 | 5 | 14 |
| MILITARY |  | 0 | 1 | 1 |
| STUDENTS (4-YEAR SCHOOL) |  | 0 | 1 | 1 |
| UNEMPLOYED |  | 0 | 1 | 1 |
| UNLOCATED |  | 1 | 1 | 2 |
| NON-RESPONDENTS |  | 9 | 11 | 20 |
| TOTAL OUTPUT: |  | 19 | 20 | 39 |

## 1970-71 INSTITUTIONAL OUTPUT

Curriculum V-001
Automotive Body Repair

| D.O.T. | JOB TITLE | GRADUATES | ELMS | TOTAL |
|---|---|---|---|---|
| 807.381 | Auto Body Repairman | 3 | 0 | 3 |
| 599.886 | Assistant Mill Operator | 1 | 0 | 1 |
| 929.887 | Dockman | 1 | 0 | 1 |
| 600.280 | Machinist | 1 | 0 | 1 |
| 862.381 | Plumbing Apprentice | 0 | 1 | 1 |
| 955.782 | Waste Control Operator | 0 | 1 | 1 |
| TOTAL EMPLOYMENT | | 6 | 2 | 8 |
| NON-RESPONDENTS | | 3 | 2 | 5 |
| TOTAL OUTPUT: | | 9 | 4 | 13 |

## 1970-71 INSTITUTIONAL OUTPUT

Curriculum V-003
Automotive Mechanics

| D.O.T. | JOB TITLE | GRADUATES | ELMS | TOTAL |
|---|---|---|---|---|
| 602.281 | Auto Mechanic | 5 | 0 | 5 |
| 860.381 | Carpenter | 1 | 0 | 1 |
| 189.118 | Manager | 2 | 1 | 3 |
| 223.387 | Parts Clerk | 1 | 0 | 1 |
| 559.885 | Tire Man | 1 | 0 | 1 |
| 952.782 | Utility Technician | 1 | 0 | 1 |
|  | Unspecified Job | 1 | 0 | 1 |
| TOTAL EMPLOYMENT |  | 12 | 1 | 13 |
| STUDENTS (4-YEAR SCHOOL) |  | 0 | 1 | 1 |
| MILITARY |  | 1 | 1 | 2 |
| UNEMPLOYED |  | 1 | 0 | 1 |
| NON-RESPONDENTS |  | 5 | 10 | 15 |
| TOTAL OUTPUT: |  | 19 | 13 | 32 |

## 1970-71 INSTITUTIONAL OUTPUT

Curriculum V-007
Carpentry & Cabinetmaking

| D.O.T. | JOB TITLE | GRADUATES | ELMS | TOTAL |
|---|---|---|---|---|
| 860.381 | Carpenter | 1 | 0 | 1 |
| 824.281 | Electrician | 0 | 3 | 3 |
| 929.887 | Material Handler | 1 | 0 | 1 |
| 920.887 | Packer, Furniture | 0 | 1 | 1 |
| 862.381 | Plumber | 0 | 1 | 1 |
| TOTAL EMPLOYMENT | | 2 | 5 | 7 |
| MILITARY | | 1 | 0 | 1 |
| NON-RESPONDENTS | | 11 | 24 | 35 |
| TOTAL OUTPUT: | | 14 | 29 | 43 |

# 1970-71 INSTITUTIONAL OUTPUT

Curriculum V-013
Diesel Vehicle Maintenance

| D.O.T. | JOB TITLE | GRADUATES | ELMS | TOTAL |
|---|---|---|---|---|
| 625.281 | Diesel Mechanic | 8 | 0 | 8 |
| 625.884 | Diesel Mechanic Helper | 3 | 0 | 3 |
| | Factory Helper | 1 | 0 | 1 |
| 185.168 | Grocery Manager | 1 | 0 | 1 |
| 929.887 | Material Handler | 1 | 0 | 1 |
| 816.884 | Welder | 1 | 0 | 1 |
| | Self-Employed | 1 | 0 | 1 |
| TOTAL EMPLOYMENT | | 16 | 0 | 16 |
| MILITARY | | 1 | 0 | 1 |
| NON-RESPONDENTS | | 5 | 13 | 18 |
| TOTAL OUTPUT: | | 22 | 13 | 35 |

# 1970-71 INSTITUTIONAL OUTPUT

Curriculum V-007
Drafting - Building Trades

| D.O.T. | JOB TITLE | GRADUATES | ELMS | TOTAL |
|---|---|---|---|---|
| 292.358 | Deliverer | 1 | 0 | 1 |
| 001.281 | Draftsman | 5 | 0 | 5 |
| 250.258 | Insurance Agent | 1 | 0 | 1 |
| 018.188 | Party Chief (Surveying) | 1 | 0 | 1 |
| TOTAL EMPLOYMENT | | 8 | 0 | 8 |
| STUDENTS (F.T.I.) | | 1 | 1 | 2 |
| NON-RESPONDENTS | | 4 | 7 | 11 |
| TOTAL OUTPUT: | | 13 | 8 | 21 |

## 1970-71 INSTITUTIONAL OUTPUT

Curriculum V-017
Drafting - Mechanical

| D.O.T. | JOB TITLE | GRADUATES | ELMS | TOTAL |
|---|---|---|---|---|
| 582.885 | Bleach Range Operator | 1 | 0 | 1 |
| 007.281 | Draftsman | 4 | 0 | 4 |
| 078.381 | Lab Technician | 1 | 0 | 1 |
| TOTAL EMPLOYMENT | | 6 | 0 | 6 |
| NON-RESPONDENTS | | 3 | 2 | 5 |
| TOTAL OUTPUT: | | 9 | 2 | 11 |

## 1970-71 INSTITUTIONAL OUTPUT

Curriculum V-018
Electrical Installation & Maintenance

| D.O.T. | JOB TITLE | GRADUATES | ELMS | TOTAL |
|---|---|---|---|---|
| 313.381 | Cook | 1 | 0 | 1 |
| 829.887 | Electrician's Helper | 1 | 0 | 1 |
| 600.280 | Machinist | 1 | 2 | 3 |
| 825.281 | Mechanic, Electrical | 1 | 0 | 1 |
| TOTAL EMPLOYMENT | | 4 | 2 | 6 |
| MILITARY | | 0 | 1 | 1 |
| NON-RESPONDENTS | | 8 | 4 | 12 |
| TOTAL OUTPUT: | | 12 | 7 | 19 |

## 1970-71 INSTITUTIONAL OUTPUT

Curriculum V-022
Graphic Arts - Printing

| D.O.T. | JOB TITLE | GRADUATES | ELMS | TOTAL |
|---|---|---|---|---|
| 143.062 | Camera Man | 1 | 0 | 1 |
| 860.381 | Carpenter | 0 | 1 | 1 |
| 359.878 | Day Care Teacher | 0 | 1 | 1 |
| | Pressman | 1 | 0 | 1 |
| 185.168 | Produce Manager | 1 | 0 | 1 |
| 976.381 | Reproduction Equipment Oper. | 1 | 1 | 2 |
| TOTAL EMPLOYMENT | | 4 | 3 | 7 |
| STUDENTS (4-YEAR SCHOOL) | | 1 | 0 | 1 |
| NON-RESPONDENTS | | 9 | 17 | 26 |
| TOTAL OUTPUT: | | 14 | 20 | 34 |

# 1970-71 INSTITUTIONAL OUTPUT

Curriculum V-032
Machinist

| D.O.T. | JOB TITLE | GRADUATES | ELMS | TOTAL |
|---|---|---|---|---|
| 601.280 | Die Cutter & Maker | 1 | 0 | 1 |
| 600.280 | Machinist | 1 | 0 | 1 |
| | Machine Operator | 0 | 1 | 1 |
| 007.187 | Tool Part Programmer | 1 | 1 | 2 |
| | Transfer Line Operator | 1 | 0 | 1 |
| 952.782 | Utility Technician | 0 | 1 | 1 |
| TOTAL EMPLOYMENT | | 4 | 3 | 7 |
| NON-RESPONDENTS | | 6 | 5 | 11 |
| TOTAL OUTPUT: | | 10 | 8 | 18 |

## 1970-71 INSTITUTIONAL OUTPUT

Curriculum V-037
Plumbing & Pipefitting

| D.O.T. | JOB TITLE | GRADUATES | ELMS | TOTAL |
|---|---|---|---|---|
| 951.867 | Filling Station Worker | 1 | 0 | 1 |
| 681.280 | Fixer | 0 | 1 | 1 |
| 382.884 | Janitor | 1 | 0 | 1 |
| 862.381 | Plumber & Pipefitter | 2 | 0 | 2 |
| TOTAL EMPLOYMENT | | 4 | 1 | 5 |
| NON-RESPONDENTS | | 9 | 12 | 21 |
| TOTAL OUTPUT: | | 13 | 13 | 26 |

# 1970-71 INSTITUTIONAL OUTPUT

Curriculum V-038
Practical Nursing

| D.O.T. | JOB TITLE | GRADUATES | ELMS | TOTAL |
|---|---|---|---|---|
| 359.878 | Day Care Teacher | 0 | 1 | 1 |
| 609.684 | Inspector | 0 | 1 | 1 |
| 078.381 | Lab Technician | 1 | 0 | 1 |
| 209.388 | Office Clerk | 0 | 1 | 1 |
| 354.878 | Practical Nurse | 39 | 0 | 39 |
| 290.478 | Sales Clerk | 0 | 1 | 1 |
| 311.878 | Waitress-Cashier | 0 | 1 | 1 |
| TOTAL EMPLOYMENT | | 40 | 5 | 45 |
| STUDENTS (F.T.I.) | | 0 | 1 | 1 |
| UNEMPLOYED | | 0 | 4 | 4 |
| NON-RESPONDENTS | | 26 | 12 | 38 |
| TOTAL OUTPUT: | | 66 | 22 | 88 |

## 1970-71 INSTITUTIONAL OUTPUT

Curriculum V-042
Radio & Television Servicing

| D.O.T. | JOB TITLE | GRADUATES | ELMS | TOTAL |
|---|---|---|---|---|
| | Bench Hand | 1 | 0 | 1 |
| 001.281 | Draftsman, Building Trades | 1 | 0 | 1 |
| | Salesman* | 1 | 0 | 1 |
| 372.868 | Security Officer* | 1 | 0 | 1 |
| 710.281 | TV Serviceman | 1 | 0 | 1 |
| | *These two positions held by the same respondent | | | |
| TOTAL EMPLOYMENT | | 4* | 0 | 4* |
| RETIRED | | 0 | 1 | 1 |
| NON-RESPONDENTS | | 4 | 5 | 9 |
| TOTAL OUTPUT: | | 8 | 6 | 14 |

## 1970-71 INSTITUTIONAL OUTPUT

Curriculum V-050
Welding

| D.O.T. | JOB TITLE | GRADUATES | ELMS | TOTAL |
|---|---|---|---|---|
| 620.281 | Auto Mechanic | 0 | 1 | 1 |
| | Furniture Factory Worker | 1 | 0 | 1 |
| 609.380 | Grinder | 2 | 1 | 3 |
| 638.281 | Maintenance Mechanic | 0 | 1 | 1 |
| 929.887 | Moveman | 0 | 1 | 1 |
| | Proprietor | 1 | 0 | 1 |
| 816.884 | Welder | 3 | 1 | 4 |
| TOTAL EMPLOYMENT | | 7 | 5 | 12 |
| MILITARY | | 0 | 2 | 2 |
| NON-RESPONDENTS | | 9 | 15 | 24 |
| TOTAL OUTPUT: | | 16 | 22 | 38 |

# CHAPTER IV

## THE SURVEY OF EDUCATIONAL AND CAREER ASPIRATIONS OF HIGH SCHOOL SENIORS

### Rationale

The purpose of the student aspiration survey is to identify high school seniors' educational plans, their interest in the institution's present curricula, and their career aspirations. This information is useful to the institution's planners in developing long-range plans and curricula and to its student personnel office in recruiting students. It is also useful to the high school's counseling staff, and is thus compiled into separate reports by high school so that the information may be returned to cooperating schools.

It is recommended that this survey system be used by an institution over a period of several years in order to build a data base on the aspirations of high school students in the area served by the institution.

The system is controlled according to the following considerations:

a. The survey is made in the month of September and is confined to the seniors. No surveys are made of juniors or sophomores because the aspirations of most seniors are uncertain as they start their final year of high school.

b. The survey form is kept simple and it requests only the information that can be used by the institution for its planning and its operations.

c. The information obtained from the student survey form must lend itself to being consolidated or packaged in a manner that will make it easy to use.

d. The systematic collection of information on the aspirations of seniors, over a period of several years, will reveal interest patterns that will furnish guidance to an institution on the aspirations of the students located in the institution's community.

## The Survey Form

The form shown on page 88, which was developed and used to survey student aspirations, was kept simple, and it is directed primarily toward providing information for planning. The information developed by this system provides the following:

a. General: Furnishes the high school counselor and the personnel office of the institution with information necessary for contacting students.

b. Educational Plans: Provides individual educational plans for the high school seniors in the institution's community to include potential four-year college students, students who have no plans for further education, and students interested in enrolling in a technical institution. This information assists in determining educational interest trends and in estimating manpower resources available for positions at the professional and managerial levels and for positions requiring no further training beyond high school. Finally, the institution is provided with information on the number of students interested in a one-year or two-year occupational education program.

c. Career Interests: Assists in planning curricula to meet the needs of future students of the institution. This information indicates needs for new curricula, needs for additional course offerings, and the need to terminate existing curricula.

d. Interest in Current Occupational Education Programs: Provides information for estimating future demand for programs currently offered by the institution. (Each institution using this type of survey form should substitute, in the "areas of study" listed at the bottom of the sheet, the programs offered by the institution.)

## THE SYSTEM FOR SURVEYING CAREER ASPIRATIONS

### PREPARATION FOR THE SURVEY

1. THE SUPERINTENDENT OR HIS REPRESENTATIVE OF THE LOCAL SCHOOL ADMINISTRATIVE UNIT IS CONTACTED BY PERSONAL VISIT BY A REPRESENTATIVE OF THE INSTITUTION TO EXPLAIN THE SURVEY AND TO OBTAIN THE SCHOOL SYSTEM'S APPROVAL AND SUPPORT OF THE PROJECT.

2. AFTER THE HIGH SCHOOL PRINCIPALS HAVE BEEN INFORMED BY THE SUPERINTENDENT OF THE ADMINISTRATION'S APPROVAL, THE PRINCIPALS ARE CONTACTED PERSONALLY OR BY PHONE TO SET A DATE WHEN THE SURVEY FORMS MAY BE DELIVERED TO THE SCHOOL.

3. SURVEY FORMS ARE PRINTED, WITH THE INSTITUTION'S CURRICULA SUBSTITUTED FOR THAT SHOWN ON THE SAMPLE FORM. THE FORMS MAY BE CODED WITH A HANDWRITTEN NUMBER FOR EASY IDENTIFICATION BY SCHOOL.

4. AN ACCOMPANYING LETTER IS PREPARED, GIVING BRIEF INSTRUCTIONS AND LISTING THE PHONE NUMBER OF THE PERSON TO BE CONTACTED FOR COLLECTION OF THE FORMS WHEN THEY ARE COMPLETE. (SEE PAGE 87.)

5. AN EXAMPLE OF A COMPLETED STUDENT SURVEY FORM IS SHOWN ON PAGE 88.

DEPARTMENT OF
COMMUNITY COLLEGES
NORTH CAROLINA STATE BOARD OF EDUCATION
RALEIGH 27602

TO: High School Principals, (City or County)

FROM: (Name and Office)

SUBJECT: Survey of the Educational and Career Aspirations of Selected High School Seniors

DATE:

We would appreciate your school's cooperation in this survey to determine the educational plans and needs of the high school seniors in this area. The completion of the survey form should require only a short period of time--approximately 10 minutes--and therefore might normally be completed during a home-room period or other senior class period.

All seniors, regardless of their educational plans, are asked to complete a survey form. The form should be self-explanatory, but if questions concerning administration of the survey should arise, please call (name of office or institution).

If you will call our office when the forms have been completed by all seniors and returned to the counselor or the school office, a representative from (name of institution) will pick them up. We would appreciate having them no later than (date).

Thank you.

(Office)
(Address)
(Phone No.)

## SURVEY OF THE EDUCATIONAL AND CAREER ASPIRATIONS
## OF SELECTED HIGH SCHOOL SENIORS
## CONDUCTED BY
## THE OCCUPATIONAL INFORMATION CENTER
## DEPARTMENT OF COMMUNITY COLLEGES

TO THE STUDENT: This survey is designed to determine the educational plans and needs of the high school seniors in this area. Careful consideration of your responses will be of benefit in our efforts to help meet your educational needs and those of future graduates. Thank you for your cooperation.

Name James Abbott * (First Initial Last) Street Address 3100 Spring St

City Winston-Salem Zip 27103 Sex: M ✓ F ___ Age 17 Telephone Number 768-9142

A. What are your plans immediately after graduation from high school? (CHECK ONE.)

1. ___ 4-Year College or University
2. ___ Junior College
3. ✓ Technical Institute or Community College
4. ___ Business College
5. ___ Military Service
6. ___ Work, with no further training (Please specify) ___
7. ___ Other (Please specify) ___

B. List, in order of preference, your career interests. (Ex., Teacher, Mechanic)

a. Mechanic b. Truck Driver c. Pilot

C. Below are the educational programs currently offered at Forsyth Technical Institute. Other programs may be offered if there is a need and sufficient demand.

1. List, in order of preference, the number (T-022, V-042, etc.) of the programs in which you have an interest in enrolling.

First Choice V-003 Second Choice V-001 Third Choice ___

2. Please indicate any program not listed below in which you would like to enroll through a technical institute or community college. ___

D. AREAS OF STUDY AT FORSYTH TECHNICAL INSTITUTE

| | |
|---|---|
| T-041 | Architectural Technology |
| T-018 | Business Administration |
| T-022 | Electronic Data Processing |
| T-045 | Electronics Engineering Technology |
| T-030 | Executive Secretarial Science |
| T-091 | Inhalation Therapy |
| T-050 | Manufacturing Engineering Technology |
| T-043 | Mechanical Drafting and Design |
| T-104 | Nuclear Medicine Technology |
| T-009 | Ornamental Horticulture |
| T-064 | Police Science |
| T-061 | Radiologic Technology |
| T-059 | Associate Degree Nursing |
| V-024 | Air Conditioning & Refrigeration |
| V-001 | Automotive Body Repair |
| V-003 | Automotive Mechanics |
| V-015 | Building Trades Drafting |
| V-007 | Carpentry |
| V-013 | Diesel Truck Maintenance & Repair |
| V-018 | Electrical Installation |
| V-022 | Graphic Arts - Printing |
| V-032 | Machinist |
| V-017 | Mechanical Drafting |
| V-037 | Plumbing and Heating |
| V-038 | Practical Nursing |
| V-042 | Television Servicing |
| V-050 | Welding |

*Fictitious name used to preserve confidentiality.

CENTRAL HIGH SCHOOL
Student Aspirations
Senior Boys

(NAMES ARE FICTITIOUS)

| NAME | 4 year college or university | Junior college | Technical School or Community College | Business college | Military service | Work, with no further training | Other school or training | Other | CAREER INTEREST | CURRICULUM INTEREST | SUGGESTED CURRICULA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Abbott, James | | | x | | | | | | Mechanic<br>Truck driver<br>Pilot | Automotive Mechanics<br>Automotive Body Repair | |
| Anderson, Jeffrey | | | x | | | | | | Architect<br>Electronics technician<br>Policeman | Drafting-Building Trades<br>Elec. Data Processing<br>Elec. Engineering | |
| Arnold, Benjamin | x | | | | | | | | Physicist<br>Doctor<br>Lawyer | Elec. Engineering<br>Automotive Body Repair<br>Elec. Data Processing<br>Police Science | |
| Atkins, Bruce | | | x | | | | | | Draftsman<br>Engineer<br>Mechanic | Mech. Drafting & Design<br>Drafting-Mechanical<br>Drafting-Building Trades | |
| Blocker, Philip | | | x | | | | | | Game warden<br>Forest ranger<br>Wildlife manager | No interest | Game warden's training |
| Bowen, Keith | | | | | | x | | | No indication | Automotive Body Repair | |
| Brown, Mark | x | | | | | | | | Air traffic controller<br>Doctor<br>Meteorologist | No indication | |
| Brown, Reginald | NO INDICATION | | | | | | | | Truck driver | No indication | |
| Burton, John | | | x | | x | Either/Or | | | Electronics technician<br>Communications | Elec. Engineering<br>Radio/TV Servicing | |

CENTRAL HIGH SCHOOL
Student Aspirations
Senior Boys

(NAMES ARE FICTITIOUS)

| NAME | 4 year college or university | Junior college | Technical School or Community College | Business college | Military service | Work, with no further training | Other school or training | Other | CAREER INTEREST | CURRICULUM INTEREST | SUGGESTED CURRICULA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Abbott, James | | | x | | | | | | Mechanic<br>Truck driver<br>Pilot | Automotive Mechanics<br>Automotive Body Repair | |
| Anderson, Jeffrey | | | x | | | | | | Architect<br>Electronics technician<br>Policeman | Drafting-Building Trades<br>Elec. Data Processing<br>Elec. Engineering | |
| Arnold, Benjamin | x | | | | | | | | Physicist<br>Doctor<br>Lawyer | Elec. Engineering<br>Automotive Body Repair<br>Elec. Data Processing<br>Police Science | |
| Atkins, Bruce | | | x | | | | | | Draftsman<br>Engineer<br>Mechanic | Mech. Drafting & Design<br>Drafting-Mechanical<br>Drafting-Building Trades | |
| Blocker, Philip | | | x | | | | | | Game warden<br>Forest ranger<br>Wildlife manager | No interest | Game warden's training |
| Bowen, Keith | | | | | | x | | | No indication | Automotive Body Repair | |
| Brown, Mark | x | | | | | | | | Air traffic controller<br>Doctor<br>Meteorologist | No indication | |
| Brown, Reginald | NO INDICATION | | | | | | | | Truck driver | No indication | |
| Burton, John | | | x | | x | Either/Or | | | Electronics technician<br>Communications | Elec. Engineering<br>Radio/TV Servicing | |

## EDUCATIONAL PLANS - BY HIGH SCHOOL

1. AFTER THE INFORMATION FROM EACH HIGH SCHOOL'S STUDENT SURVEY FORMS HAS BEEN TRANSFERRED TO THE SUMMARY SHEET AND THE COLUMNS TOTALED, A SEPARATE REPORT OF EDUCATIONAL PLANS, CURRICULUM INTERESTS, AND CAREER INTERESTS IS PREPARED FOR EACH HIGH SCHOOL.
2. THE INFORMATION SHOWN ON THE "EDUCATIONAL PLANS" REPORT IS TAKEN FROM THE COLUMN TOTALS OF THE SUMMARY SHEET IMMEDIATELY PRECEDING.

### DAVIE COUNTY HIGH SCHOOL

| | Boys | Girls |
|---|---|---|
| 4 year college or university | 22* | 20 |
| Junior College | 3 | 1 |
| Technical School or Community College | 52* | 19 |
| Business College | 1* | 13 |
| Military Service | 3* | 2 |
| Work, with no further training | 4 | 13 |
| Other school or training | 1 | 12 |
| Other | 5 | 3 |
| NO INDICATION | 1 | 0 |
| | 92 (there were fewer boys surveyed than noted here-see note below) | 83 |

*Survey sheet marked with more than one answer-tabulated as "either/or."
90 boys were surveyed
83 girls were surveyed

## CURRICULUM INTERESTS - BY HIGH SCHOOL

1. THIS REPORT IS A TABULATION OF THE INFORMATION CONTAINED IN THE COLUMN HEADED "CURRICULUM INTEREST" ON THE SUMMARY SHEET.

2. SEPARATE TABULATIONS ARE SHOWN FOR THE CURRICULUM INTERESTS INDICATED BY BOYS AND GIRLS.

### DAVIE COUNTY HIGH SCHOOL

| Senior Boys | First Choice | Second Choice | Third Choice | TOTALS |
|---|---|---|---|---|
| Architectural Tech. | 2 | 0 | 2 | 4 |
| Business Administration | 13 | 3 | 1 | 17 |
| Electronic Data Processing | 6 | 8 | 1 | 15 |
| Electronics Engineering | 3 | 4 | 1 | 8 |
| Man. Engineering Tech. | 0 | 1 | 2 | 3 |
| Mech. Dft. & Design | 0 | 0 | 2 | 2 |
| Ornamental Horticulture | 0 | 1 | 3 | 4 |
| Police Science | 1 | 2 | 1 | 4 |
| | | | | |
| Air Conditioning | 3 | 0 | 2 | 5 |
| Auto Body Repair | 6 | 12 | 3 | 21 |
| Auto Mechanics | 9 | 8 | 5 | 22 |
| Carpentry | 2 | 0 | 0 | 2 |
| Diesel | 4 | 3 | 5 | 12 |
| Drafting-Building Trades | 0 | 0 | 1 | 1 |
| Electrical Installation | 1 | 3 | 3 | 7 |
| Graphic Arts-Printing | 1 | 0 | 0 | 1 |
| Machinist | 1 | 3 | 1 | 5 |
| Plumbing | 0 | 1 | 0 | 1 |
| Radio & TV Servicing | 0 | 5 | 5 | 10 |
| Welding | 5 | 3 | 4 | 12 |
| NO INDICATION | | | | 33 |

| Senior Girls | First Choice | Second Choice | Third Choice | TOTALS |
|---|---|---|---|---|
| Architectural Tech. | 0 | 1 | 0 | 1 |
| Business Administration | 5 | 9 | 10 | 24 |
| Electronic Data Processing | 13 | 7 | 4 | 24 |
| Ornamental Horticulture | 0 | 1 | 1 | 2 |
| Police Science | 1 | 2 | 0 | 3 |
| Secretarial-Executive | 18 | 12 | 4 | 34 |
| | | | | |
| Auto Mechanics | 0 | 1 | 2 | 3 |
| Drafting-Mechanical | 0 | 1 | 0 | 1 |
| Graphic Arts-Printing | 2 | 0 | 0 | 2 |
| Machinist | 0 | 1 | 0 | 1 |
| Practical Nursing | 15 | 4 | 2 | 21 |
| NO INDICATION | | | | 31 |

## CAREER ASPIRATIONS - BY HIGH SCHOOL

1. THE REPORT OF CAREER ASPIRATIONS IS MADE FROM THE INFORMATION CONTAINED ON THE SUMMARY SHEET.

2. CAREERS ARE LISTED (HANDWRITTEN) ON A TALLY SHEET (NOT SHOWN) AND TABULATED ACCORDING TO FIRST, SECOND, AND THIRD CHOICE. SINCE DIFFERENT STUDENTS MAY LIST THE SAME CAREERS OR OCCUPATIONS BY DIFFERENT TITLES, VALUE JUDGMENTS MUST OFTEN BE MADE REGARDING THE COMBINING OF JOB TITLES FOR TABULATION. FOR EXAMPLE, SOME STUDENTS MAY LIST "FASHION DESIGN," OTHERS, "FASHION" AND STILL OTHERS, "DESIGNING." JUDGMENT MUST THEN BE MADE AS TO WHETHER THE THREE CAREERS OR OCCUPATIONS MAY BE COMBINED. OTHER STUDENTS MAY LIST AN AREA OF STUDY, SUCH AS BUSINESS ADMINISTRATION, RATHER THAN AN OCCUPATION. IN SUCH CASE, THE AREA OF STUDY, ESPECIALLY IF IT ENCOMPASSES A VARIETY OF OCCUPATIONAL TITLES, MAY HAVE TO BE LISTED.

3. SEPARATE REPORTS ARE MADE FOR THE CAREER ASPIRATIONS OF BOYS AND FOR THOSE OF GIRLS. THE SAMPLE REPORT SHOWN ON THE FOLLOWING PAGES IS THAT FOR ASPIRATIONS REPORTED BY BOYS.

DAVIE COUNTY HIGH SCHOOL
Senior Boys

## CAREER ASPIRATIONS

| | First Choice | Second Choice | Third Choice | TOTALS |
|---|---|---|---|---|
| Accountant | 2 | 1 | 0 | 3 |
| Advisor (Bus. Adm.) | 0 | 0 | 1 | 1 |
| Air conditioning | 0 | 1 | 0 | 1 |
| Architect | 0 | 1 | 0 | 1 |
| Artist | 1 | 0 | 0 | 1 |
| commercial | 1 | 0 | 0 | 1 |
| Astrologist | 1 | 0 | 0 | 1 |
| Atomic scientist | 0 | 1 | 0 | 1 |
| Auto body repairman | 2 | 2 | 1 | 5 |
| Auto parts dealer | 0 | 1 | 0 | 1 |
| Barber | 1 | 0 | 0 | 1 |
| Biology research | 0 | 1 | 0 | 1 |
| Botanist | 0 | 1 | 0 | 1 |
| Brick mason | 0 | 6 | 2 | 8 |
| Broadcasting | 1 | 0 | 0 | 1 |
| Bum | 0 | 0 | 1 | 1 |
| Business | 8 | 2 | 1 | 11 |
| Carpenter | 3 | 0 | 0 | 3 |
| Coach | 0 | 1 | 0 | 1 |
| Computer programmer | 1 | 3 | 1 | 5 |
| Computer technologist | 1 | 0 | 0 | 1 |
| Construction | 1 | 0 | 0 | 1 |
| Contractor | 0 | 0 | 1 | 1 |
| Dairy man | 0 | 0 | 1 | 1 |
| Data processing | 1 | 0 | 1 | 2 |
| Diesel maintenance | 1 | 2 | 2 | 5 |
| Disc jockey | 0 | 1 | 0 | 1 |
| Doctor | 3 | 0 | 0 | 3 |
| Draftsman | 0 | 1 | 0 | 1 |
| Electrical installation | 1 | 3 | 0 | 4 |
| Electronics technician | 3 | 1 | 2 | 6 |
| Engineer | 0 | 4 | 2 | 6 |
| chemical | 1 | 0 | 0 | 1 |
| civil | 0 | 1 | 0 | 1 |
| electrical | 2 | 0 | 0 | 2 |
| Farmer | 2 | 2 | 2 | 6 |
| Forestry | 1 | 0 | 0 | 1 |
| Furniture work | 0 | 0 | 1 | 1 |
| Golf course maintenance | 0 | 0 | 1 | 1 |
| Green Beret | 0 | 1 | 0 | 1 |
| Hair stylist | 0 | 1 | 0 | 1 |
| Heavy equipment operator | 1 | 0 | 0 | 1 |
| Horseshoeing | 1 | 0 | 0 | 1 |
| IBM maintenance | 1 | 0 | 0 | 1 |
| Interior decorator | 1 | 0 | 2 | 3 |
| Journalist | 1 | 0 | 0 | 1 |
| Laboratory technician | 0 | 1 | 0 | 1 |
| Land surveyor | 1 | 0 | 0 | 1 |
| Lawyer | 0 | 1 | 1 | 2 |
| Machine maintenance | 0 | 1 | 0 | 1 |

| | First Choice | Second Choice | Third Choice | TOTAL |
|---|---|---|---|---|
| Machinist | 0 | 1 | 3 | 4 |
| Manual labor | 0 | 0 | 5 | 5 |
| Mechanic | 12 | 4 | 6 | 22 |
| aircraft | 1 | 1 | 0 | 2 |
| auto | 4 | 4 | 2 | 10 |
| Musical instrument dealer | 0 | 0 | 1 | 1 |
| Navy medical corpsman | 0 | 1 | 0 | 1 |
| Navy nuclear technician | 1 | 0 | 0 | 1 |
| Oceanographer | 1 | 0 | 0 | 1 |
| Office job | 1 | 0 | 0 | 1 |
| Ornamental horticulture | 1 | 0 | 0 | 1 |
| Orthodontist | 1 | 0 | 0 | 1 |
| Painter | 1 | 0 | 0 | 1 |
| Patrolman | 1 | 1 | 1 | 3 |
| Pharmacist | 1 | 0 | 0 | 1 |
| Pilot | 1 | 0 | 0 | 1 |
| Professional athlete | 0 | 0 | 1 | 1 |
| Professional musician | 0 | 1 | 0 | 1 |
| Professional race driver | 1 | 0 | 0 | 1 |
| Professional tennis player | 0 | 1 | 0 | 1 |
| Radio & TV repairman | 0 | 3 | 0 | 3 |
| Radio announcer | 1 | 0 | 0 | 1 |
| Radio operator | 1 | 0 | 0 | 1 |
| Salesman | 0 | 1 | 2 | 3 |
| Secretary | 0 | 0 | 4 | 4 |
| Service station (owner) | 0 | 1 | 0 | 1 |
| Speech | 0 | 1 | 0 | 1 |
| Store manager | 1 | 0 | 0 | 1 |
| Teacher | 2 | 8 | 3 | 13 |
| Technician | 1 | 0 | 0 | 1 |
| Television announcer | 0 | 0 | 1 | 1 |
| Television operator | 0 | 1 | 0 | 1 |
| Textile worker | 0 | 1 | 0 | 1 |
| Truck driver | 0 | 1 | 0 | 1 |
| Welder | 3 | 0 | 2 | 5 |
| NO INDICATION | | | | 11 |

## EDUCATIONAL PLANS - BY COUNTY

1. THIS REPORT IS PREPARED FOR EACH COUNTY IN THE INSTITUTION'S ATTENDANCE AREA IN WHICH THERE IS MORE THAN ONE HIGH SCHOOL.
2. THE FIGURES FOR THIS REPORT ARE OBTAINED BY COMBINING THE FIGURES FROM THE EDUCATIONAL PLANS REPORTS FOR EACH HIGH SCHOOL IN THE COUNTY.

FORSYTH COUNTY
Educational Plans

| | Boys | Girls |
|---|---|---|
| 4 year college or university | 606 | 568 |
| Junior College | 112 | 97 |
| Technical School or Community College | 439 | 322 |
| Business College | 20 | 211 |
| Military Service | 121 | 17 |
| Work with no further training | 65 | 158 |
| Other school or training | 25 | 113 |
| Other | 7 | 18 |
| NO INDICATION | 27 | 26 |
| | 1422* | 1530** |

*There were 70 boys who answered survey sheet with "either/or"--only 1352 boys were surveyed.

**There were 79 girls who answered survey sheet with "either/or"--only 1451 girls were surveyed.

## CURRICULUM INTERESTS - BY COUNTY

1. THIS REPORT IS PREPARED FOR EACH COUNTY IN THE INSTITUTION'S ATTENDANCE AREA IN WHICH THERE IS MORE THAN ONE HIGH SCHOOL.
2. A SEPARATE REPORT IS PREPARED FOR THE CURRICULUM INTERESTS OF BOYS AND THOSE OF GIRLS.
3. THE FIGURES ARE OBTAINED BY COMBINING THE TOTAL FIGURES FROM THE CURRICULUM INTERESTS REPORTS FOR EACH HIGH SCHOOL IN THE COUNTY.

FORSYTH COUNTY
Senior Boys

### CURRICULUM INTERESTS

| | First Choice | Second Choice | Third Choice | TOTALS |
|---|---|---|---|---|
| Architectural Technology | 53 | 18 | 16 | 87 |
| Business Administration | 120 | 52 | 28 | 200 |
| Electronic Data Processing | 81 | 65 | 35 | 181 |
| Electronics Engineering | 69 | 36 | 29 | 134 |
| Manufacturing Engineering | 10 | 8 | 7 | 25 |
| Mechanical Drafting & Design | 16 | 27 | 20 | 63 |
| Ornamental Horticulture | 4 | 7 | 11 | 22 |
| Police Science | 74 | 43 | 39 | 156 |
| Secretarial-Executive | 2 | 5 | 4 | 11 |
| Air Conditioning | 17 | 19 | 24 | 60 |
| Auto Body Repair | 32 | 70 | 53 | 155 |
| Auto Mechanics | 131 | 90 | 46 | 267 |
| Carpentry | 21 | 27 | 32 | 80 |
| Diesel Vehicle Maintenance | 25 | 34 | 25 | 84 |
| Drafting-Building Trades | 8 | 11 | 16 | 35 |
| Drafting-Mechanical | 14 | 24 | 18 | 56 |
| Electrical Installation | 15 | 21 | 32 | 68 |
| Graphic Arts | 15 | 10 | 6 | 31 |
| Machinist | 11 | 15 | 12 | 38 |
| Plumbing | 12 | 11 | 10 | 33 |
| Practical Nursing | 3 | 2 | 3 | 8 |
| Radio/TV Servicing | 21 | 28 | 28 | 77 |
| Welding | 16 | 44 | 55 | 115 |
| NO INTEREST | | | | 584 |

FORSYTH COUNTY
Senior Girls

## CURRICULUM INTERESTS

| | First Choice | Second Choice | Third Choice | TOTALS |
|---|---|---|---|---|
| Architectural Technology | 7 | 4 | 4 | 15 |
| Business Administration | 119 | 135 | 49 | 303 |
| Electronic Data Processing | 78 | 80 | 73 | 231 |
| Electronics Engineering | 1 | 2 | -- | 3 |
| Manufacturing Engineering | -- | -- | -- | -- |
| Mechanical Drafting & Design | 3 | 11 | 8 | 22 |
| Ornamental Horticulture | 7 | 5 | 2 | 14 |
| Police Science | 8 | 15 | 10 | 33 |
| Secretarial--Executive | 234 | 127 | 61 | 422 |
| | | | | |
| Air Conditioning | -- | -- | -- | -- |
| Auto Body Repair | 1 | 1 | -- | 2 |
| Auto Mechanics | -- | -- | 2 | 2 |
| Carpentry | 1 | 2 | 2 | 5 |
| Diesel Vehicle Maintenance | -- | -- | 1 | 1 |
| Drafting--Building Trades | 1 | 2 | 4 | 7 |
| Drafting--Mechanical | 3 | 1 | 2 | 6 |
| Electrical Installation | -- | -- | -- | -- |
| Graphic Arts | 21 | 13 | 13 | 47 |
| Machinist | -- | -- | 2 | 2 |
| Plumbing | 1 | -- | 1 | 2 |
| Practical Nursing | 149 | 62 | 57 | 268 |
| Radio & TV Servicing | 2 | -- | 1 | 3 |
| Welding | -- | -- | -- | -- |
| NO INTEREST | | | | 702 |

## CAREER ASPIRATIONS - BY COUNTY

1. THIS REPORT IS PREPARED FOR EACH COUNTY IN THE INSTITUTION'S ATTENDANCE AREA IN WHICH THERE IS MORE THAN ONE HIGH SCHOOL.
2. A SEPARATE REPORT IS PREPARED FOR THE CAREER INTERESTS OF BOYS AND THOSE OF GIRLS. THE SAMPLE REPORT SHOWN ON THE FOLLOWING PAGES IS THAT FOR ASPIRATIONS REPORTED BY BOYS.
3. THE OCCUPATIONAL TITLES AND FIGURES COLUMNS ARE PREPARED BY COMBINING THE TITLES AND FIGURES FROM THE CAREER ASPIRATIONS REPORTS FOR EACH HIGH SCHOOL IN THE COUNTY. OCCUPATIONS LISTED BY VARIOUS TITLES WHICH ARE SYNONYMOUS ARE COMBINED.

FORSYTH COUNTY
Senior Boys

## CAREER ASPIRATIONS

| | First Choice | Second Choice | Third Choice | TOTALS |
|---|---|---|---|---|
| Accountant | 29 | 20 | 13 | 62 |
| Actor | - | 2 | - | 2 |
| Actuarial science | - | - | 1 | 1 |
| Advertising | 2 | 4 | 2 | 8 |
| Agricultural business | - | 1 | - | 1 |
| Agriculture | 1 | - | - | 1 |
| Air conditioning | 3 | 8 | 8 | 19 |
| Aircraft design | - | 1 | - | 1 |
| Air traffic control | 1 | - | 3 | 4 |
| Airline work | - | 2 | - | 2 |
| Airplane mechanic | 8 | 10 | 3 | 21 |
| Anesthetist | 1 | - | - | 1 |
| Announcer | 1 | 3 | - | 4 |
| Anthropologist | - | 1 | - | 1 |
| Archeologist | - | 1 | - | 1 |
| Architect | 40 | 21 | 19 | 80 |
| landscape | 1 | 2 | - | 3 |
| Artist | 14 | 9 | 5 | 28 |
| advertising | 1 | 1 | - | 2 |
| commercial | 8 | 3 | 3 | 14 |
| Astronomer | 1 | 3 | 2 | 6 |
| Athletics (& sports) | 38 | 21 | 15 | 74 |
| Auto body repair | 8 | 17 | 14 | 39 |
| Auto design | 2 | - | - | 2 |
| Auto mechanic | 19 | 20 | 14 | 53 |
| Auto parts dealer | - | - | 3 | 3 |
| Auto tester | - | - | 1 | 1 |
| Aviation | 2 | 1 | 2 | 5 |
| Banking | 4 | 3 | 2 | 9 |
| Beautician | - | - | 1 | 1 |
| Biochemist | 1 | - | - | 1 |
| Biologist | 2 | 2 | 2 | 6 |
| Black power activist | - | - | 1 | 1 |
| Blue collar worker | - | - | 1 | 1 |
| Bookkeeper | 2 | 2 | 1 | 5 |
| Bowling lane mechanic | 2 | - | - | 2 |
| Brain surgeon | - | - | 1 | 1 |
| Brewmaster | - | 1 | - | 1 |
| Brickmason | 3 | 1 | 2 | 6 |
| Broadcasting | 10 | 6 | 4 | 20 |
| Broker | 2 | - | 2 | 4 |
| Building contractor | 1 | - | 1 | 2 |
| Bulldozer operator | 1 | - | - | 1 |
| Bum | - | 1 | - | 1 |
| Bus driver | - | 1 | 2 | 3 |
| Business | 41 | 53 | 31 | 125 |
| Business administration | 10 | 6 | 1 | 17 |

FORSYTH COUNTY
Senior Boys

| | First Choice | Second Choice | Third Choice | TOTALS |
|---|---|---|---|---|
| Business education | 1 | - | - | 1 |
| Business executive | 3 | 3 | - | 6 |
| Business owner | 3 | 2 | 3 | 8 |
| Car dealer | - | - | 1 | 1 |
| Carpenter | 8 | 15 | 17 | 40 |
| Cartoonist | 1 | 1 | 1 | 3 |
| Cattle rancher | 1 | - | - | 1 |
| Certified Public Accountant | 4 | 1 | 1 | 6 |
| Chef | - | 2 | - | 2 |
| Chemical analyst | - | 1 | - | 1 |
| Traveler | 1 | 1 | - | 2 |
| Truck driver | 9 | 14 | 18 | 41 |
| Typist | - | 1 | - | 1 |
| Upholsterer | - | 1 | - | 1 |
| Veterinarian | 8 | 4 | 4 | 16 |
| Welder | 4 | 19 | 27 | 50 |
| Wholesale distributor | 1 | - | - | 1 |
| Wildlife | 2 | - | - | 2 |
| Woodworking | - | 2 | - | 2 |
| Work | - | 4 | 3 | 7 |
| Writer | 11 | 8 | 3 | 22 |
| X-ray technician | 3 | - | 2 | 5 |
| Zoologist | 1 | - | - | 1 |
| NO INDICATION | | | | 130 |

## EDUCATIONAL PLANS - THREE-COUNTY COMPOSITE

1. THE COMPOSITE REPORT OF EDUCATIONAL PLANS IS A SUMMARY OF THE EDUCATIONAL PLANS REPORTS FOR EACH COUNTY IN THE AREA.
2. THIS REPORT IS PREPARED BY COMBINING THE EDUCATIONAL PLANS REPORTED BY BOYS AND BY GIRLS BY COUNTY AND BY TOTALING THESE COLUMNS. AGAIN, OCCUPATIONS LISTED BY VARIOUS TITLES WHICH ARE SYNONYMOUS ARE COMBINED.

## THREE-COUNTY COMPOSITE
## Educational Plans

| BOYS | Forsyth County | Stokes County | Davie County | TOTAL |
|---|---|---|---|---|
| 4-year college or university | 606 | 33 | 22 | 661 |
| Junior college | 112 | 3 | 3 | 118 |
| Technical school/comm. college | 439 | 63 | 52 | 554 |
| Business college | 20 | 1 | 1 | 22 |
| Military service | 121 | 11 | 3 | 135 |
| Work with no further training | 65 | 21 | 4 | 90 |
| Other school or training | 25 | 1 | 1 | 27 |
| Other | 7 | 1 | 5 | 13 |
| No indication | 27 | 3 | 1 | 31 |

| GIRLS | Forsyth County | Stokes County | Davie County | TOTAL |
|---|---|---|---|---|
| 4-year college or university | 568 | 37 | 20 | 625 |
| Junior college | 97 | 5 | 1 | 103 |
| Technical school/comm. college | 322 | 38 | 19 | 379 |
| Business college | 211 | 22 | 13 | 246 |
| Military service | 17 | 4 | 2 | 23 |
| Work with no further training | 158 | 34 | 13 | 205 |
| Other school or training | 113 | 22 | 12 | 147 |
| Other | 18 | 5 | 3 | 26 |
| No indication | 26 | 2 | -- | 28 |

### CURRICULUM INTERESTS - THREE-COUNTY COMPOSITE

1. THE COMPOSITE REPORT OF CURRICULUM INTERESTS IS A SUMMARY OF THE CURRICULUM INTERESTS REPORTS FOR EACH COUNTY IN THE AREA.
2. THIS REPORT IS PREPARED BY LISTING THE CURRICULUM INTERESTS BY COUNTY AND BY TOTALING THESE COLUMNS.
3. SEPARATE REPORTS ARE PREPARED FOR THE CURRICULUM INTERESTS INDICATED BY BOYS AND BY GIRLS.

THREE-COUNTY COMPOSITE
Senior Boys

## CURRICULUM INTERESTS

| TECHNICAL | Forsyth County | Stokes County | Davie County | TOTAL |
|---|---|---|---|---|
| Architectural Technology | 87 | 8 | 4 | 99 |
| Business Administration | 200 | 17 | 17 | 234 |
| Electronic Data Processing | 181 | 16 | 15 | 212 |
| Electronics Engineering | 134 | 14 | 8 | 156 |
| Manufacturing Engineering | 25 | 2 | 3 | 30 |
| Mechanical Drafting & Design | 63 | 6 | 2 | 71 |
| Ornamental Horticulture | 22 | 2 | 4 | 28 |
| Police Science | 156 | 7 | 4 | 167 |
| Secretarial-Executive | 11 | 1 | - | 12 |
| VOCATIONAL | | | | |
| Air Conditioning | 60 | 8 | 5 | 73 |
| Automotive Body Repair | 155 | 27 | 21 | 203 |
| Automotive Mechanics | 267 | 38 | 22 | 327 |
| Carpentry | 80 | 9 | 2 | 91 |
| Diesel Vehicle Maintenance | 84 | 15 | 12 | 111 |
| Drafting-Building Trades | 35 | 7 | 1 | 43 |
| Drafting-Mechanical | 56 | 9 | - | 65 |
| Electrical Installation | 68 | 8 | 7 | 83 |
| Graphic Arts | 31 | 3 | 1 | 35 |
| Machinist | 38 | 4 | 5 | 47 |
| Plumbing & Pipefitting | 33 | 3 | 1 | 37 |
| Practical Nursing | 8 | - | - | 8 |
| Radio/TV Servicing | 77 | 8 | 10 | 95 |
| Welding | 115 | 25 | 12 | 152 |
| NO INTEREST | 584 | 45 | 33 | 662 |

THREE-COUNTY COMPOSITE
Senior Girls

## CURRICULUM INTERESTS

| TECHNICAL | Forsyth County | Stokes County | Davie County | TOTAL |
|---|---|---|---|---|
| Architectural Technology | 15 | 2 | 1 | 18 |
| Business Administration | 303 | 43 | 24 | 370 |
| Electronic Data Processing | 231 | 30 | 24 | 285 |
| Electronics Engineering | 3 | - | - | 3 |
| Manufacturing Engineering | - | - | - | - |
| Mechanical Drafting & Design | 22 | - | - | 22 |
| Ornamental Horticulture | 14 | 6 | 2 | 22 |
| Police Science | 33 | 7 | 3 | 43 |
| Secretarial-Executive | 422 | 55 | 34 | 511 |
| VOCATIONAL | | | | |
| Air Conditioning | - | - | - | - |
| Automotive Body Repair | 2 | - | - | 2 |
| Automotive Mechanics | 2 | 1 | 3 | 6 |
| Carpentry | 5 | - | - | 5 |
| Diesel Vehicle Maintenance | 1 | - | - | 1 |
| Drafting-Building Trades | 7 | - | - | 7 |
| Drafting-Mechanical | 6 | - | 1 | 7 |
| Electrical Installation | - | - | - | - |
| Graphic Arts | 47 | 2 | 2 | 51 |
| Machinist | 2 | 1 | 1 | 4 |
| Plumbing & Pipefitting | 2 | - | - | 2 |
| Practical Nursing | 268 | 44 | 21 | 333 |
| Radio/TV Servicing | 3 | 3 | - | 6 |
| Welding | - | - | - | - |
| NO INTEREST | 702 | 73 | 31 | 806 |

## CAREER ASPIRATIONS - THREE-COUNTY COMPOSITE

1. THE COMPOSITE REPORT OF CAREER ASPIRATIONS IS A SUMMARY OF THE CAREER ASPIRATIONS REPORTS FOR EACH COUNTY IN THE AREA.
2. THE OCCUPATIONAL TITLES AND FIGURES COLUMNS ARE PREPARED BY COMBINING THE FIGURES FROM THE CAREER ASPIRATIONS REPORTS FOR EACH COUNTY.
3. SEPARATE REPORTS ARE MADE FOR THE CAREER ASPIRATIONS OF BOYS AND THOSE OF GIRLS. THE SAMPLE REPORT SHOWN ON THE FOLLOWING PAGES IS THAT FOR ASPIRATIONS REPORTED BY BOYS.

THREE-COUNTY COMPOSITE

## HIGH SCHOOL SENIOR BOYS' CAREER ASPIRATIONS
FROM THREE-COUNTY SURVEY
FALL, 1972

| | First Choice | Second Choice | Third Choice | Total All Choices |
|---|---|---|---|---|
| Accountant | 33 | 22 | 13 | 68 |
| Actor | -- | 2 | -- | 2 |
| Actuarial science | -- | -- | 1 | 1 |
| Advertising | 2 | 4 | 2 | 8 |
| Aeronautics | -- | 1 | -- | 1 |
| Agricultural business | -- | 1 | -- | 1 |
| Agriculture | 1 | -- | -- | 1 |
| Air conditioning | 3 | 10 | 10 | 23 |
| Aircraft design | -- | 1 | -- | 1 |
| Air traffic control | 1 | -- | 3 | 4 |
| Airline work | -- | 2 | -- | 2 |
| Aircraft mechanic | 9 | 11 | 3 | 23 |
| Anesthetist | 1 | -- | -- | 1 |
| Announcer | 3 | 5 | -- | 8 |
| Anthropologist | -- | 1 | -- | 1 |
| Archeologist | -- | 1 | -- | 1 |
| Architect | 45 | 24 | 19 | 88 |
| landscape | 1 | 1 | -- | 3 |
| Artist | 15 | 10 | 5 | 30 |
| advertising | 1 | 1 | -- | 2 |
| commercial | 9 | 3 | 3 | 15 |
| Astrologist | 1 | -- | -- | 1 |
| Astronomer | 2 | 3 | 2 | 7 |
| Athletics (& sports) | 39 | 22 | 51 | 112 |
| Atomic scientist | -- | 1 | -- | 1 |
| Auto body repairman | 11 | 27 | 21 | 59 |
| Auto designer | 2 | -- | -- | 2 |
| Auto parts dealer | -- | 1 | 3 | 4 |
| Auto tester | -- | -- | 1 | 1 |
| Aviation | 2 | 2 | 2 | 6 |
| Banking | 4 | 3 | 2 | 9 |
| Barber | 1 | -- | 1 | 2 |
| Beautician | -- | -- | 1 | 1 |
| Bible counselor | -- | 1 | -- | 1 |
| Biochemist | 1 | -- | -- | 1 |
| Biologist | 3 | 3 | 2 | 8 |
| Black power activist | -- | -- | 1 | 1 |
| Blue collar worker | -- | -- | 1 | 1 |
| Bookkeeper | 2 | 2 | 1 | 5 |
| Botanist | -- | 2 | -- | 2 |
| Brain Surgeon | -- | -- | 1 | 1 |
| Brewmaster | -- | 1 | -- | 1 |
| Brickmason | 10 | 9 | 4 | 23 |
| Broadcasting | 11 | 6 | 4 | 21 |

THREE-COUNTY COMPOSITE
Boys' Career Aspirations

| | First Choice | Second Choice | Third Choice | Total All Choices |
|---|---|---|---|---|
| Broker | 2 | — | 2 | 4 |
| Building contractor | 1 | — | 1 | 2 |
| Bulldozer operator | 1 | — | — | 1 |
| Bum | — | 1 | 1 | 2 |
| Bus driver | — | 1 | 2 | 3 |
| Business | 47 | 60 | 32 | 139 |
| Typist | — | 1 | — | 1 |
| Upholsterer | -- | 1 | — | 1 |
| Veterinarian | 8 | 4 | 4 | 16 |
| Welder | 8 | 27 | 38 | 73 |
| Wholesale distributor | 1 | — | — | 1 |
| Wildlife | 2 | — | — | 2 |
| Woodworking | — | 2 | — | 2 |
| Work | 3 | 5 | 12 | 20 |
| Writer | 11 | 8 | 3 | 22 |
| X-ray technician | 3 | — | 2 | 5 |
| Zoologist | 2 | — | — | 2 |
| NO INDICATION | | | | 154 |

# CHAPTER V

# COMPILATION OF SURVEY RESULTS

## Rationale

In Chapters II, III, and IV, systems have been presented for gathering and processing information regarding the projected skill needs in the institution's attendance area, the employment status of graduates and "ELMS" of the institution, and the educational and career aspirations of high school seniors within the area. Chapter V presents the report, in summary form, of the results of the information obtained from the three survey systems. The purpose of this "Manpower Planning Report" is to provide an example of the type of report which may be useful to the planner in accessing both immediate and long-term needs and in developing long-range plans for the educational program.

In addition to the "Manpower Planning Report," Chapter V presents an example of a form which may be used as a data base to establish, over a period of five years, a record of the output of the institution as well as of the predicted job openings and number of potential students interested in a given occupation. This data base could easily be expanded to cover ten years' growth projections, and would then provide a useful tool for long-range planning.

# MANPOWER PLANNING REPORT

THIS REPORT IS A SUMMARY OF THE THREE TYPES OF INFORMATION WHICH WERE GATHERED BY THE SYSTEM DESCRIBED IN THIS MANUAL. THE PROCESS USED FOR OBTAINING THE INFORMATION SHOWN IN EACH COLUMN IS AS FOLLOWS:

COLUMN 1 - A D.O.T. NUMBER IS OBTAINED FOR EACH OCCUPATION BY MATCHING IT WITH THE APPROPRIATE DEFINITION IN THE DICTIONARY OF OCCUPATIONAL TITLES.[1] A SUMMARIZATION OF THE DEFINITION FOR EACH OCCUPATION REPRESENTED IN THIS REPORT IS SHOWN IN THE APPENDIX, PAGES F-3 - F-24.

COLUMN 2 - THE OCCUPATIONAL TITLES ARE THOSE OBTAINED FROM THE BUSINESS AND INDUSTRY SURVEY. THEY INCLUDE THOSE TITLES WRITTEN IN ON THE FORM BY THE EMPLOYER AS WELL AS THE TITLES PRINTED ON THE SURVEY FORM.

COLUMN 3 - THE FIVE-YEAR EMPLOYMENT NEED FOR EACH OCCUPATION REPRESENTS THE PROJECTED GROWTH RATE AS ASCERTAINED BY THE BUSINESS SURVEY PLUS THE AVERAGE REPLACEMENT RATE DETERMINED BY FORMULAS USED BY THE NORTH CAROLINA EMPLOYMENT SECURITY COMMISSION.

COLUMN 4 - CURRICULUM INPUT REFERS TO THE CURRICULUM OR CURRICULUMS OFFERED BY THE LOCAL INSTITUTIONS FOR THE SPECIFIC PURPOSE OF OFFERING TRAINING REQUISITE TO ENTERING THE OCCUPATIONS LISTED IN COLUMN 2.

COLUMN 5 - EMPLOYMENT, BY CURRICULUM, OF 1970-71 GRADUATES IS DETERMINED BY A FOLLOW-UP SURVEY OF THE GRADUATES, MADE APPROXIMATELY ONE YEAR AFTER THEIR GRADUATION DATE. COLUMN 5 SHOWS THE CURRICULUMS FROM WHICH EMPLOYEES IN EACH OF THE INDICATED OCCUPATIONS GRADUATED DURING THE 1970-71 SCHOOL YEAR AND THE NUMBER (IN PARENTHESES,) OF THOSE GRADUATES FROM EACH CURRICULUM HOLDING THAT OCCUPATIONAL TITLE AT THE TIME OF THE FOLLOW-UP SURVEY.

COLUMN 6 - EMPLOYMENT, BY CURRICULUM, OF 1970-71 "ELMS" IS DETERMINED BY A FOLLOW-UP SURVEY OF THE WITHDRAWALS WHO LEFT THE INSTITUTION DURING THE SPECIFIED PERIOD (1970-71). THIS SURVEY, LIKE THE SURVEY OF GRADUATES, IS MADE APPROXIMATELY ONE YEAR AFTER THE WITHDRAWAL DATE, OR WITHIN THE 1971-72 SCHOOL YEAR. THIS COLUMN SHOWS THE CURRICULUMS IN WHICH EMPLOYEES IN EACH OF THE INDICATED OCCUPATIONS HAD BEEN ENROLLED DURING 1970-71 AND THE NUMBER (IN PARENTHESES) OF THOSE "ELMS," OR WITHDRAWALS, FROM EACH CURRICULUM HOLDING THAT OCCUPATIONAL TITLE AT THE TIME OF THE FOLLOW-UP SURVEY.

COLUMN 7 - "SENIORS' INTEREST" REFERS TO THE NUMBER OF HIGH SCHOOL SENIORS WHOSE CAREER ASPIRATIONS AS SHOWN ON THE SURVEY OF HIGH SCHOOL STUDENTS MATCHED THOSE OCCUPATIONS SURVEYED IN THE BUSINESS AND INDUSTRY SURVEY (COLUMN 2). THE FIGURES IN COLUMN 7 WERE OBTAINED FROM THE SURVEY OF HIGH SCHOOL SENIORS IN THE THREE-COUNTY ATTENDANCE AREA MADE IN THE FALL OF 1971.

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[1] Dictionary of Occupational Titles, Vol. 1: Definitions of Titles, 3rd Edition. Washington, D.C.: U.S. Department of Labor, Manpower Administration, Bureau of Employment Security, 1965.

# MANPOWER PLANNING REPORT

1971-1972

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
| D.O.T. | OCCUPATIONS | 5-YEAR NEED | CURRICULUM INPUT | INSTITUTIONAL OUTPUT |  | SENIORS' INTEREST |
|  |  |  |  | 1970-71 GRADUATES | 1970-71 "ELMS" |  |
|  | A. SERVICE |  |  |  |  |  |
| 330.371 | Barber | 33 |  |  |  | 2 |
| 332.271 | Beautician & Cosmetician | 166 | V-009 |  |  | 53 |
|  | Counselor |  |  |  |  |  |
| 166.268 | Employment Counselor | 191 |  |  |  |  |
| 166.268 | Personnel Counselor | 8 |  |  |  |  |
| 237.168 | Travel Counselor | 19 |  |  |  |  |
| 012.188 | Fire Service Worker | 36 | T-063 |  |  | 1 |
| 311.878* | Food Service Worker | 597 |  | T-050(1),V-018(1) | V-038(1) | 5 |
| Any Ind. | Foreman, Non-Working | 42 |  |  |  |  |
|  | Law Enforcement |  |  |  |  |  |
| 375.268 | Police Occupations | 34 | T-064 |  | T-013(1) | 35 |
| 372.868 | Security Service Worker | 49 | T-064 | V-042(1) |  | 1 |
|  | Medical Worker |  |  |  |  |  |
| 355.878 | Hospital Attendant | 17 |  |  |  |  |
| 354.878 | Nurse, Practical & PBT | 209 | V-038 | V-038(39) |  | 15 |
| 355.878 | Nursing Assistant | 131 |  |  |  | 2 |

* D.O.T. Number is for waitress, which occurred most frequently in Food Service Worker responses.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
| D.O.T. | OCCUPATIONS | 5-YEAR NEED | CURRICULUM INPUT | INSTITUTIONAL OUTPUT 1970-71 GRADUATES | INSTITUTIONAL OUTPUT 1970-71 "ELMS" | SENIORS' INTEREST |
|  | B. MAINTENANCE, CONSTRUCTION AND REPAIR |  |  |  |  |  |
| 861.381 | Brickmason | 143 | V-070 |  |  |  |
| 860.381 | Carpenter | 964 | V-007 | T-001(1),V-007(1),V-003(1) | V-022(1) | 10 |
| 844.884 | Concrete Finisher | 86 | V-070 |  |  | 23 |
| 824.281 | Electrician | 179 | V-018 | V-018(2),T-045(1) | V-007(3),T-018(1),T-009(1) |  |
|  | Foreman, Non-Working | 104 |  |  |  | 21 |
| 407.884 | Groundskeeper | 18 | T-009 |  |  |  |
| 863.884 | Insulationist | 5 | V-024 |  |  | 1 |
| 600.280 | Machinist, Maintenance | 131 | V-032 | V-001(1),V-032(1),V-018(1) | V-018(2) |  |
| 899.281 | Maintenance Man, General Utility | 68 |  |  |  | 9 |
|  | Mechanic, Except Motor Vehicle |  |  |  |  |  |
| 37.281 | Heating and Air Conditioning Mechanic | 261 | V-024 | V-024(4) | V-024(1) |  |
| 38.281 | Maintenance Mechanic | 167 |  |  |  |  |
| 33.281 | Office Machines Mechanic | 36 |  |  | V-050(2), V-037(1), T-045(1) | 3 |
| 21.281 | Small Motor Mechanic | 43 |  |  |  |  |
|  | Mechanic, Motor Vehicle |  |  |  |  | 3 |
| 99.387 | Appraiser | 17 | V-001,V-003 |  |  |  |
| 02.281 | Automotive Mechanic | 227 | V-003 | V-003(5) |  |  |
| 07.381 | Auto. Body Repairman | 46 | V-001 | V-001(3) |  |  |
| 05.281 | Diesel Mechanic | 113 | V-013 | V-013(11),V-024(1) |  | 28* |
| 07.287 | Service Writer | 1 | V-001,V-003 |  |  | 11 |
| 20.281 | Transmission Specialist | 67 | V-003 |  |  | 7 |

* 193 students indicated "mechanic" as career interest, without specifying type of mechanic.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
| | | | | INSTITUTIONAL OUTPUT | | |
| D.O.T. | OCCUPATIONS | 5-YEAR NEED | CURRICULUM INPUT | 1970-71 GRADUATES | 1970-71 "ELMS" | SENIORS' INTEREST |
| 638.281 | Millwright | 3 | | | | |
| 806.884 | Mobile Homes & Campers Worker | 94 | | | | |
| 862.281 | Oil Burner Man | 3 | V-037 | | | |
| 840.884 | Painter | 121 | | | | 2 |
| 862.381 | Plumber and/or Pipefitter | 243 | V-037 | V-037(2) | V-007(1),V-001(1) | 9 |
| | Repairman | | | | | |
| 710.281 | Instrument Repairman | 27 | | | | |
| 710.281 | Radio and TV Repairman | 16 | V-042 | V-042(1),T-045(1) | | 5 |
| 365.381 | Shoe Repairman | 18 | | | | |
| 741.887 | Sander | 1 | | | | |
| 804.281 | Sheet Metal Worker | 329 | | | | |
| 950.782 | Stationary Engineer | 5 | | | | |
| 601.280 | Tool and Die Maker | 7 | V-032 | V-032(1) | | |
| 841.781 | Wallpaperer, etc. | 107 | | | | |
| 816.884 | Welder, Flamecutter | 201 | V-050 | V-050(3),V-013(1) | V-050(1) | 8 |
| | C. MANAGERS | | | | | |
| | Manager | | | | | |
| | Assistant Manager | 237 | | | | |
| 183.118 | Branch Manager | 218 | | | | |
| 168.168 | Credit Manager | 25 | T-018 | | | |
| | Department Manager | | | | | |
| 164.118 | Advertising | 13 | T-018 | | | |
| 219.388 | Budget | 40 | T-018 | T-018(1) | | |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
|  |  |  |  | INSTITUTIONAL OUTPUT |  |  |
| D.O.T. | OCCUPATIONS | 5-YEAR NEED | CURRICULUM INPUT | 1970-71 GRADUATES | 1970-71 "ELMS" | SENIORS' INTEREST |
|  | Miscellaneous | 10 |  |  |  |  |
| 166.118 | Personnel and Training | 133 |  |  |  |  |
| 165.068 | Public Relations | 1 |  |  |  |  |
| 162.158 | Purchasing | 25 | T-018 | T-050(1) |  |  |
| 162.118 | Sales and Distribution | 173 | T-018 |  |  | 1 |
| 189.118 | General Manager | 276 |  | V-003(2),V-013(1),V-022(1)<br>V-024(1),T-018(1),T-045(1) | T-018(4),T-045(1) | 14 |
| 981.138 | Maintenance Manager | 37 |  |  |  |  |
| 169.168 | Office Manager | 24 | T-018 |  |  | 1 |
|  | Plant Manager | 47 |  |  |  |  |
| 187.168 | Resident Manager | 9 |  |  |  | 1 |
| 186.288 | Mortgage and Loan Officer | 101 | T-018 |  |  |  |
| 197.168 | Superintendent | 57 |  |  |  |  |
|  | Supervisor | 157 |  | T-050(1) |  |  |
|  | Supervisor/Section Leader | 2 |  |  |  |  |
|  | D. TECHNICAL |  |  |  |  |  |
| 141.081 | Commercial Artist | 28 |  |  |  | 27 |
| 152.088 | Composer | 0 |  |  |  |  |
| 973.381 | Compositor | 27 | V-022 |  |  |  |
|  | Computer Programmer |  |  |  |  |  |
| 020.188 | Business | 38 | T-022 |  |  | 37 |
| 020.188 | Scientific and Technical | 8 |  |  |  |  |
|  | Custom Design Engineer | 9 |  |  |  |  |
| 142.051 | Decorator, Interior | 2 |  |  |  | 33 |
| 079.378 | Dental Assistant | 22 |  |  | T-030(1) | 18 |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
| D.O.T. | OCCUPATIONS | 5-YEAR NEED | CURRICULUM INPUT | INSTITUTIONAL OUTPUT |  | SENIORS' INTEREST |
|  |  |  |  | 1970-71 GRADUATES | 1970-71 "ELMS" |  |
| 142.051 | Designer, Interior | 2 |  |  |  | 2 |
|  | Draftsman |  |  |  |  |  |
| 001.281 | Building Trades | 31 |  | V-015(6),V-042(1) |  |  |
| 007.281 | Mechanical | 58 |  | V-017(4) |  |  |
| 160.288 | Estimator | 6 |  |  |  |  |
| 187.168 | Funeral Director, Embalmer | 68 |  |  |  |  |
| 079.368 | Inhalation Therapist | 93 |  |  |  |  |
|  | Mass Media - T.V., Radio, Newspaper, Advertising | 100 |  |  |  |  |
|  | Printing Trades, not elsewhere listed | 36 |  | V-022(2) | T-018(1),V-022(1) |  |
| 075.378 | Registered Nurse | 214 |  |  |  |  |
| 018.188 | Surveyor | 1 |  | V-015(1) |  |  |
|  | Technician |  |  |  |  |  |
| 001.281 | Architectural Technician | 17 | T-041 |  |  |  |
| 002.281 | Chemical Technician | 3 |  |  |  |  |
| 141.081 | Commercial Graphics Tech. | 26 | V-022 |  |  |  |
| 712.381 | Dental Technician | 24 |  |  |  | 13 |
| 003.181 | Electrical & Electronics Technician | 27 | T-045,V-042 |  |  |  |
| 003.181 | Electronics Technician | 21 | T-045 |  |  |  |
|  | Engineering Technician |  |  |  |  | 5 |
| 005.081 | Civil | 21 |  |  |  |  |
| 003.081 | Electrical | 21 |  |  |  |  |
| 003.281 | Environmental | 4 |  |  |  |  |
| 007.081 | Mechanical | 15 | T-050 | T-043(2),T-050(2) | T-050(1) |  |
| 012.081 | Safety | 6 |  |  |  |  |
| 976.381 | Film Technician | 35 | V-022 |  |  |  |
| 319. | Food Processing Tech. | 17 |  |  |  |  |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
|  |  |  |  | INSTITUTIONAL OUTPUT |  |  |
| D.O.T. | OCCUPATIONS | 5-YEAR NEED | CURRICULUM INPUT | 1970-71 GRADUATES | 1970-71 "ELMS" | SENIORS' INTEREST |
| 142. | Interior Design Tech. | 0 |  |  |  |  |
|  | Marine Technician | 0 |  |  |  |  |
| 078.381 | Medical Technician | 8 |  |  |  | 16 |
| 199.381 | Non-Destructive Tech. | 7 |  |  |  |  |
| 079.378 | Operating Room Technician | 7 |  |  |  |  |
| 040.081 | Ornamental Horticulture Technician | 42 | T-009 | T-009(1) |  | 6 |
| 078.381 | Science (Lab) Technician | 16 |  | V-038(1),V-017(1),T-050(1) |  | 14 |
|  | E. SALES |  |  |  |  |  |
| 280.358 | Distributor & Dealer | 63 | T-018 | T-045(1),V-024(1),V-042(1), V-015(1) | T-018(2),T-001(1),T-045(1), T-009(1) |  |
| 280.358 | Salesman |  |  |  |  |  |
| 280.358 | Salesman - Automobile | 150 |  |  |  |  |
| 290.478 | Sales Clerks | 440 |  |  |  |  |
| 292.358 | Sales - Deliveryman | 180 |  |  |  |  |
| 250.258 | Salesman - Insurance | 300 | T-018 |  |  | 9 |
|  | Salesman - Wholesale and Retail Trades | 1,543 |  |  |  |  |
|  | F. CLERICAL |  |  |  |  |  |
| 160.188 | Accountant | 18 | T-018 | T-018(4) |  | 45 |
| 210.388 | Bookkeeper | 209 | T-018 | T-018(2) |  | 18 |
| 211.468 | Cashier | 47 | T-030 |  | T-018(1) | 2 |
|  | Clerk |  |  |  |  |  |
| 219.488 | Accounting Clerk | 311 | T-018,T-030 |  |  |  |
| 219.388 | Administrative Clerk | 1 | T-018,T-030 |  |  |  |
| 206.388 | File Clerk | 72 | T-030 |  |  | 12 |
| 209.388 | General Clerk | 437 | T-030,T-018 |  | V-038(2) | 13 |
| 223.388 | Inventory Clerk | 17 | T-030,T-018 |  | T-018(1) |  |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
| D.O.T. | OCCUPATIONS | 5-YEAR NEED | CURRICULUM INPUT | INSTITUTIONAL OUTPUT | | SENIORS' INTEREST |
| | | | | 1970-71 GRADUATES | 1970-71 "ELMS" | |
| 215.488 | Payroll/Timekeeping Clerk | 53 | T-030,T-018 | T-018(2) | | |
| 205.268 | Personnel Clerk | 47 | T-030,T-018 | | | |
| 221.388 | Production Clerk | 38 | T-030,T-018 | | | |
| 222.387 | Shipping and Receiving Clerk | 138 | T-030,T-018 | | T-009(1),T-018(2) | |
| 223.387 | Stock Clerk | 177 | T-030,T-018 | T-009(1),V-003(1),T-043(1) | | |
| | Traffic Rate Clerk | 16 | T-030,T-018 | | | |
| 240.388 | Collector and Adjuster | 66 | T-018 | | | |
| 132.088 | Copywriter | 10 | | | | |
| | Data Processer | 0 | T-022 | | | 38 |
| | Operator | | | | | |
| 213.382 | Computer Operator | 56 | | | | 8 |
| 213.582 | Key Punch Operator | 8 | | | | 21 |
| 207. | Office Machine Operator | 35 | T-018,T-030 | | | |
| 213.382 | Peripheral EDP Equip. Op. | 19 | T-022 | | | |
| 235.862 | Switchboard Operator | 49 | | | | |
| 203.588 | Teletype Operator | 2 | | | | |
| 209.688 | Proofreader | 13 | T-030 | | | |
| 237.368 | Receptionist | 538 | T-030 | | | 21 |
| | Secretary | | | | | |
| 201.368 | Executive & General Sec. | 1,312 | T-030 | T-030(5) | T-018(2),T-030(4) | 366 |
| 201.368 | Legal Secretary | 81 | | | | 6 |
| 201.368 | Medical Secretary | 22 | | | | 9 |
| 202.388 | Stenographer | 214 | T-030 | | | 5 |
| 212.368 | Teller | 151 | T-030 | | | |
| 919.368 | Ticket Agent | 1 | | | | |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
|  |  | 5-YEAR NEED | CURRICULUM INPUT | INSTITUTIONAL OUTPUT |  | SENIORS' INTEREST |
| D.O.T. | OCCUPATIONS |  |  | 1970-71 GRADUATES | 1970-71 "ELMS" |  |
|  | G. PRODUCTION |  |  |  |  |  |
| 905.883 | Driver | 377 |  | V-015(1) | T-018(2),T-009(1) |  |
|  | Foreman, Non-Working | 153 |  |  | T-009(1) |  |

## MISCELLANEOUS OCCUPATIONS REPORTED BY GRADUATES AND "ELMS"

OCCUPATIONS REPORTED BY GRADUATES AND BY "ELMS" ARE MATCHED, INSOFAR AS POSSIBLE, TO THE OCCUPATIONS LISTED ON THE "MANPOWER PLANNING REPORT" (SEE PAGE 113). TITLES WHICH ARE NOT SYNONYMOUS WITH THOSE LISTED ON THE MANPOWER PLANNING REPORT ARE CODED ACCORDING TO D.O.T. DEFINITIONS AND ARE SHOWN ON A SEPARATE REPORT, BY GRADUATES AND BY "ELMS."

1970-71

## Miscellaneous Occupations reported by ELMS

| D.O.T. | Occupational Titles | Curriculum |
|---|---|---|
| 153.228 | Assistant Pro | (1) T-018 |
| 609.885 | Buffer | (1) T-041 |
| 382.884 | Custodial Agent | (1) T-050 |
| 359.878 | Day Care Teacher | (2) V-038, V-022 |
| 929.887 | Dock Worker | (1) V-024 |
| 681.280 | Fixer | (1) V-037 |
| 920.887 | Furniture Packer | (1) V-007 |
| 609.684 | Inspector | (2) V-038, T-050 |
| No No. Given | Journalism Worker | (1) T-018 |
| 862.884<br>407.887 | Laborer | (1) T-018<br>(1) T-009 |
| 821.381 | Lineman | (1) T-018 |
| 699.887 | Machine Cleaner | (1) T-018 |
| | Machine Operator | (4) T-018, (1) V-024, (1) V-032, (1) T-050 |
| 929.887 | Move Man | (1) V-050 |
| 120.108 | Pastor | (1) T-043 |
| 231.588 | Postal Clerk | (2) V-024, (1) T-022, (1) T-018 |
| | Proprietor | (1) T-018 |
| 741.884 | Sprayer | (1) T-018 |
| 559.885 | Tire Recapper | (1) T-018 |
| 007.187 | Tool Part Programmer | (1) V-032 |
| 609.380 | Turbine Blade Grinder | (1) V-050 |
| 952.782 | Utility Technician | (1) V-032 |
| 955.782 | Waste Control Operator | (1) V-001 |

## Miscellaneous Occupations reported by Graduates

| D.O.T. | Occupational Titles | Curriculum |
|---|---|---|
| 164.068 | Advertising Trainee | (1) T-018 |
| 599.886 | Assistant Mill Operator | (1) V-001 |
| No No. Given | Bench Hand | (1) V-042 |
| 582.885 | Bleach Range Operator | (1) V-017 |
| 143.062 | Camera Man | (1) V-022 |
| 298.081 | Display Trainee | (1) T-018 |
| 929.887 | Dockman | (1) V-001 |
|  | Factory Helper | (1) V-013 |
|  | Field Operations Specialist | (1) T-045 |
| 915.867 | Filling Station Worker | (1) V-037 |
|  | Furniture Factory Worker | (1) V-050 |
| 097.288 | Instructor | (1) V-050 |
| 382.884 | Janitor | (1) V-037 |
| 007.187 | Machine Tool Part Programmer | (1) V-032 |
| 929.887 | Material Handler | (3) V-013, V-024, V-007 |
| 012.188 | Production Planner | (1) T-018 |
| 910.138 | Railroad Yard Conductor | (1) V-024 |
| 017.281 | Technical Illustrator | (1) T-043 |
| 559.885 | Tire Man | (1) V-003 |
|  | Transfer Line Operator | (1) V-032 |
| 609.380 | Turbine Blade Grinder | (2) V-050 |
| 952.782 | Utility Technician | (1) V-003 |

## THE DATA BASE

1. INFORMATION ON OCCUPATIONS AND CURRICULUM INPUT IS TAKEN DIRECTLY FROM THE "MANPOWER PLANNING REPORT."
2. INFORMATION ON EMPLOYMENT BY CURRICULUM AND HIGH SCHOOL SENIORS' INTEREST FOR THE FIRST YEAR (1971) IS TAKEN DIRECTLY FROM THE "MANPOWER PLANNING REPORT." UPDATING OF THIS INFORMATION WILL BE RECORDED EACH YEAR AFTER THE ANNUAL STUDENT FOLLOW-UP SURVEY AND SURVEY OF HIGH SCHOOL SENIORS ARE COMPLETED.
3. IT IS RECOMMENDED THAT A RE-SURVEY OF BUSINESS AND INDUSTRY BE MADE APPROXIMATELY THREE YEARS AFTER THE INITIAL SURVEY, AND THAT THE "5-YEAR NEED" FIGURES THEN BE ADJUSTED.
4. THE DATA BASE MAY BE EXPANDED TO PROVIDE A 10-YEAR BASE FOR LONG-RANGE PLANNING.

## DATA BASE

| Col. 1 | Col. 2 | Col. 3 | Col. 4 | Col. 5 | | | Col. 6 | | | Col. 7 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| D.O.T. | OCCUPATIONS | 5-YEAR NEED | CURRICULUM INPUT | EMPLOYMENT BY CURRICULUM | | | | | | SENIORS' INTEREST | |
| | | | | GRADS | | | ELMS | | | | |
| | | | | YEAR | | TOTAL | YEAR | | TOTAL | YEAR | |
| 862.381 | Plumber and/or Pipefitter | 243 | V-037 | 1971 | V-037(2) | | 1971 | V-007(1),V-001(1) | | 1971 | 9 |
| | | | | 1972 | | | 1972 | | | 1972 | 9 |
| | | | | 1973 | | | 1973 | | | 1973 | |
| | | | | 1974 | | | 1974 | | | 1974 | |
| | | | | 1975 | | | 1975 | | | 1975 | |
| 710.281 | Repairman<br>Instrument Repairman | 27 | | 1971 | | | 1971 | | | 1971 | |
| | | | | 1972 | | | 1972 | | | 1972 | 1 |
| | | | | 1973 | | | 1973 | | | 1973 | |
| | | | | 1974 | | | 1974 | | | 1974 | |
| | | | | 1975 | | | 1975 | | | 1975 | |
| 710.281 | Radio and TV Repairman | 16 | V-042 | 1971 | V-042(1),T-045(1) | | 1971 | | | 1971 | 5 |
| | | | | 1972 | | | 1972 | | | 1972 | 4 |
| | | | | 1973 | | | 1973 | | | 1973 | |
| | | | | 1974 | | | 1974 | | | 1974 | |
| | | | | 1975 | | | 1975 | | | 1975 | |

# APPENDIX FOR SECTION ONE

# Appendix A

The survey response, in order to be valid for planning purposes, should be representative of all major types of business and industry within the planning area. A method of measuring the representation of the responses is contained in this appendix.

The Standard Industrial Classification Manual[1] provides an instrument for validating the representation of responses. Each industry and business, except non-profit organizations, is coded to this classification system. The Employment Security Commission lists all profit-making organizations by county on a print-out which also gives the SIC code for each organization. A listing of North Carolina manufacturing industries by SIC codes is also available in the publication North Carolina Directory of Manufacturing Firms.[2]

This appendix illustrates a card file system for determining employment by SIC codes and provides a sample report of survey response by two-digit SIC classifications.

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[1] Standard Industrial Classification Manual. Washington, D.C.: U. S. Bureau of the Budget, Government Printing Office, 1967.

[2] North Carolina Directory of Manufacturing Firms--1968. Raleigh, N. C.: North Carolina Department of Labor, 1968.

## SYSTEM FOR COMPILING INFORMATION ON TOTAL EMPLOYMENT, EMPLOYMENT RESPONSE AND RESPONSE PRECENTAGE BY SIC CODE

The following procedure was used in setting up a card file on the business survey according to SIC Code Numbers:

1) A card was made for each two-digit SIC Code Number (from print-out sheets).

2) The total employment figure for that SIC Code Number was placed at the top of the card (calculated from the print-out sheets).

3) Two headings were used: Mail, Phone.

4) As mail response came in company names, total employment for each company (from print-out sheets), and the three-digit SIC Code Number for each company (from print-out sheets) were written in.

5) The procedure listed in #4 was also used for writing in phone response.

6) When the card was complete, the employment response was totaled (both mail and phone) and the response percentage was calculated (see Sample). These totals were placed at the top of the card.

SAMPLE CARDS:

| SIC 07 | EMP. 636 | Response: 159 | 25%* |
|---|---|---|---|
| | MAIL | | |
| 071 | COMPANY NAME | 78 | |
| 072 | COMPANY NAME | 63 | |
| | PHONE | | |
| 071 | COMPANY NAME | 18 | |
| | TOTAL RESPONSE | 159 | |

* 159 (Response)is 25% of 636 (Employment).

| SIC 14 | EMP. 1328 | Response: 829 | 62% |
|---|---|---|---|
| | MAIL | | |
| 141 | COMPANY NAME | 113 | |
| 142 | COMPANY NAME | 52 | |
| 143 | COMPANY NAME | 61 | |
| 144 | COMPANY NAME | 93 | |
| 144 | COMPANY NAME | 510 | |
| | PHONE | 0 | |
| | TOTAL RESPONSE | 829 | |

The following reports (pages A-4 through A-6) were compiled from this card file.

| SIC | EMPLOYED | EMPLOYMENT REPRESENTED BY RESPONSE | PERCENTAGE OF EMPLOYMENT REPRESENTED |
|---|---|---|---|
| 14 | 128 | 128 | 100 |
| 21 | 11,644 | 11,622 | 99 |
| 60 | 1,710 | 1,693 | 99 |
| 36 | 6,949 | 6,730 | 97 |
| 48 | 998 | 887 | 88 |
| 22 | 7,703 | 6,672 | 87 |
| 42 | 6,190 | 5,278 | 85 |
| 49 | 537 | 444 | 82 |
| 26 | 1,430 | 1,169 | 82 |
| 89 | 526 | 422 | 80 |
| 41 | 344 | 265 | 77 |
| 27 | 816 | 625 | 76 |
| 38 | 136 | 101 | 74 |
| 28 | 207 | 148 | 72 |
| 20 | 2,163 | 1,532 | 71 |
| 16 | 640 | 446 | 70 |
| 63 | 1,060 | 745 | 70 |
| 33 | 41 | 26 | 63 |
| 53 | 2757 | 1610 | 58 |
| 35 | 2,136 | 1,202 | 56 |
| 25 | 1,205 | 591 | 49 |
| 55 | 1,743 | 800 | 46 |
| 72 | 1,341 | 630 | 46 |
| 17 | 2,158 | 984 | 45 |
| 75 | 444 | 204 | 45 |
| 34 | 1,342 | 561 | 42 |
| 23 | 397 | 164 | 41 |
| 70 | 476 | 195 | 41 |

| SIC | EMPLOYED | EMPLOYMENT REPRESENTED BY RESPONSE | PERCENTAGE OF EMPLOYMENT REPRESENTED |
|---|---|---|---|
| 80 | 1,115 | 448 | 40 |
| 32 | 377 | 145 | 39 |
| 52 | 468 | 170 | 36 |
| 57 | 659 | 236 | 35 |
| 54 | 1,634 | 555 | 34 |
| 50 | 3,776 | 1,256 | 33 |
| 24 | 380 | 118 | 31 |
| 73 | 1,210 | 385 | 31 |
| 58 | 2,622 | 778 | 30 |
| 82 | 107 | 31 | 29 |
| 64 | 322 | 94 | 29 |
| 15 | 1,342 | 373 | 27 |
| 30 | 54 | 14 | 26 |
| 59 | 1,130 | 289 | 26 |
| 65 | 327 | 74 | 22 |
| 76 | 93 | 18 | 19 |
| 86 | 104 | 19 | 18 |
| 47 | 66 | 11 | 17 |
| 37 | 121 | 19 | 16 |
| 61 | 677 | 99 | 15 |
| 07 | 44 | 6 | 14 |
| 79 | 302 | 39 | 12 |
| 56 | 1,092 | 125 | 11 |
| 81 | 147 | 13 | 9 |
| 39 | 175 | 11 | 6 |
| 45 | 1,496 | 0 | 0 |
| 78 | 160 | 0 | 0 |
| 66 | 40 | 0 | 0 |

| SIC | EMPLOYED | EMPLOYMENT REPRESENTED BY RESPONSE | PERCENTAGE OF EMPLOYMENT REPRESENTED |
|---|---|---|---|
| 67 | 60 | 0 | 0 |
| 62 | 35 | 0 | 0 |

# Appendix B

This appendix provides the formulas used to find replacement rates and replacement figures used in projecting employment needs.

# FORMULAS FOR CALCULATING ANNUAL REPLACEMENT RATE, FIVE-YEAR REPLACEMENT, AND FIVE-YEAR NEED
shown in
"1972-77 EMPLOYMENT NEEDS BY OCCUPATION" (Pages 37-43)

1. The figures in the "Annual Replacement Rate" column were derived from Appendix Table 2 and Appendix Table 3 in North Carolina Manpower Needs by Industry and Occupation to 1975.[1]

   The formula for finding replacement rates, using these tables, is as follows:

   $$\frac{\text{Replacement Needs* } \div 7}{\text{1960 Employment** } + \text{ 1975 Employment** } \div 2} = \text{Annual Replacement Rate}$$

2. The formula for finding annual replacement figures is as follows:

   $$\frac{\text{1972 Employment*** } + \text{ 1977 Employment***}}{2} \times \text{Replacement Rate} = \text{Annual Replacement}$$

   Figures for "Five-Year Replacement" column are found by multiplying annual replacement figures by five.

3. "Five-Year Need" column figures are found by adding "Growth" column figures and "Five-Year Replacement" column figures.

EXAMPLE: Civil Engineer

1. $\frac{448 \div 7}{2200 + 4345 \div 2} = \frac{64}{3273} = .0196$ or 1.96% (Replacement Rate = 1.96%)

2. $\frac{71 + 84}{2} \times .0196 = 1.52$ (Annual Replacement = 1.52)

3. 1.52 x 5 = 7.6, rounded to 8 (Five-Year Replacement = 8)

4. 13 (Growth) + 8 (5-Year Replacement) = 21 (Five-Year Need = 21)

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[1] North Carolina Manpower Needs by Industry and Occupation to 1975, Raleigh, NC: Employment Security Commission of North Carolina, 1971.

*Appendix Table 3, column 2, North Carolina Manpower Needs by Industry and Occupation to 1975 (see footnote 1, above).

**Appendix Table 2, columns 1 and 3 (see above).

***See columns 1 and 2 of "1972-77 Employment Needs by Occupation," (pages 37-43).

# Appendix C

This appendix illustrates the statistical procedure used to develop confidence intervals and presents, in tabular form, the 95% confidence interval of the current and 1977 projection figures by job classification.

# STATISTICAL PROCEDURE USED TO DEVELOP CONFIDENCE INTERVALS FOR TOTAL EMPLOYMENT BY JOB CLASSIFICATION

Mathematical Equation For Confidence Interval

$$K^2 \cdot Z_{.95} \cdot \frac{R}{a\sqrt{n}} \cdot \sqrt{\frac{N - n}{N - 1}}$$

where $N$ = Size of parent population

$n$ = Sample size

$R$ = Range of Firm employment

$a$ = Scaling coefficient used to estimate sample variance from sample range

$Z_{.95}$ = $Z$ score corresponding to 2½ per cent of the area of the normal curve in each tail of a unit normal distribution.

$K$ = Scaling factor to convert equation from confidence interval for the mean to confidence interval for total employment.

In the previously reported data the above variables were:

$N = 1456$

$n = 182$

$R$ = Variable by job classification

$a = 5.4$

$Z_{.95} = 1.96$

$K = 8.$

# SERVICE OCCUPATIONS

| Job Classifications | Current Total | 95% Confidence Interval | 1977 Total | 95% Confidence Interval | Growth |
|---|---|---|---|---|---|
| Fire Service Workers | 188 | | 214 | | 26 |
| Food Service Workers | 1007 | 11.3 | 1285 | 14.5 | 278 |
| Foreman, Non-working | 78 | | 106 | | 28 |
| Nurses, Practical | 417 | 8.1 | 495 | 8.1 | 78 |
| Security Service Workers | 157 | * | 186 | * | 29 |
| Nurses, Practical(+ first year PBT) | 15 | | 25 | | 10 |
| Nursing Assistants (Male & Female) | 362 | * | 410 | * | 48 |
| Housekeeping | 46 | | 55 | | 9 |
| Counselors | 21 | | 26 | | 5 |
| Hostess | 24 | 1.6 | 48 | 6.4 | 24 |
| Chef | 80 | 4.8 | 128 | 4.8 | 48 |
| Trained Cook | 16 | * | 32 | * | 16 |
| Butcher | 56 | 1.6 | 56 | 1.6 | 0 |
| Police Occupations | 266 | | 281 | | 15 |
| Garbage Men | 24 | * | 24 | * | 0 |
| TOTAL: | 2757 | | 3371 | | 614 |

* Zero Variance (Range)

## MAINTENANCE, CONSTRUCTION, REPAIR, POWERPLANT OCCUPATIONS

| Job Classifications | Current Total | 95% Confidence Interval | 1977 Total | 95% Confidence Interval | Growth |
|---|---|---|---|---|---|
| Brickmason | 84 | 3.2 | 218 | 11.3 | 134 |
| Carpenter | 1010 | 30.6 | 1829 | 61.2 | 819 |
| Electrician | 402 | 8.1 | 569 | 12.9 | 167 |
| Foreman, Non-working | 341 | 3.2 | 413 | 3.2 | 72 |
| Instrument Repairman | 32 | * | 56 | * | 24 |
| Machinist, Maintenance | 412 | 6.4 | 512 | 12.9 | 100 |
| Maintenance, General Utility | 320 | 4.8 | 363 | 4.8 | 43 |
| Mechanic, Automotive | 604 | 16.1 | 795 | 24.2 | 191 |
| Mechanic, Body Repair, Auto | 119 | 1.6 | 156 | 1.6 | 37 |
| Mechanic, Diesel | 444 |  | 524 |  | 80 |
| Mechanic, Maintenance | 887 | * | 990 | 3.2 | 103 |
| Mechanic, Office Machines | 36 | * | 39 | * | 3 |
| Millwright | 41 |  | 42 |  | 1 |
| Plumber/Pipefitter | 418 | 14.5 | 627 | 32.2 | 209 |
| Serviceman, Radio & T.V. | 39 |  | 53 |  | 14 |
| Sheet Metal Worker, Maintenance | 301 | 16.1 | 609 | 17.7 | 308 |
| Stationary Engineer | 73 |  | 74 |  | 1 |
| Tool & Die Maker | 23 |  | 29 |  | 6 |
| Welders, Flamecutters, Maintenance | 356 | 12.9 | 539 | 19.3 | 183 |
| Painters | 284 | 30.6 | 373 | 37.0 | 89 |
| Machine Operators | 502 | 14.5 | 867 | 46.7 | 365 |
| Wallpaper, Plaster, Tile, Carpet, Linoleum | 396 | 56.4 | 461 | 56.4 | 65 |
| Insulation | 80 | * | 80 | * | 0 |
| Installation | 248 | 14.5 | 368 | 20.9 | 120 |
| Mold Makers | 24 | 1.6 | 56 | 8.1 | 32 |

(continued)

## MAINTENANCE, CONSTRUCTION, REPAIR, POWERPLANT OCCUPATION (continued)

| Job Classifications | Current Total | 95% Confidence Interval | 1977 Total | 95% Confidence Interval | Growth |
|---|---|---|---|---|---|
| Sanders | 8 | * | 8 | * | 0 |
| Concrete Finishers | 96 | 6.4 | 160 | 11.3 | 64 |
| Formica Fabricators | 56 | * | 120 | * | 64 |
| Mechanic, Air Conditioning, Refrig. | 139 | 3.2 | 224 | 11.3 | 85 |
| Skilled Laborers, Factory | 829 | 45.1 | 1027 | 77.3 | 198 |
| Tire Cappers, Changers | 197 | 4.8 | 230 | 8.1 | 33 |
| Car Wash & Service Station | 111 | 6.4 | 160 | 17.7 | 49 |
| Drivers | 3207 | 12.9 | 3420 | 22.5 | 213 |
| Dock Workers | 746 | 9.7 | 750 | 11.3 | 4 |
| Carriers & Deliverers | 124 | | 133 | | 9 |
| Mobile Homes Workers & Campers | 93 | * | 173 | * | 80 |
| Groundskeepers | 144 | 3.2 | 144 | 3.2 | 0 |
| Mechanic, Small Motor | 144 | 3.2 | 176 | 1.6 | 32 |
| Shoe Repairman | 16 | * | 32 | * | 16 |
| Oil Burner Men | 48 | 3.2 | 48 | * | 0 |
| Transmission Specialists | 32 | * | 96 | * | 64 |
| Service Writer | 16 | * | 16 | * | 0 |
| Appraiser | 8 | * | 24 | * | 16 |
| TOTAL: | 13,490 | | 17,583 | | 4,093 |

* Zero Variance (Range)

# MANAGERS & OFFICERS

| Job Classifications | Current Total | 95% Confidence Interval | 1977 Total | 95% Confidence Interval | Growth |
|---|---|---|---|---|---|
| Branch Managers | 343 | 6.4 | 519 | 12.9 | 176 |
| Departmental Manager, Advertising | 55 | * | 62 | * | 7 |
| Departmental Manager, Budget | 70 | 1.6 | 102 | 4.8 | 32 |
| Departmental Manager, Personnel & Training | 443 | * | 529 | * | 86 |
| Departmental Manager, Public Relations | 12 | | 12 | | 0 |
| Departmental Manager, Purchasing | 95 | * | 109 | * | 14 |
| Departmental Manager, Sales & Distribution | 257 | 3.2 | 398 | 8.1 | 141 |
| General Manager | 864 | 8.1 | 1048 | 11.3 | 184 |
| Assistant Manager | 368 | 27.4 | 560 | 32.2 | 192 |
| Plant Manager | 166 | * | 196 | * | 30 |
| Office Manager | 59 | * | 76 | * | 17 |
| Manager-Owner | 336 | 4.8 | 288 | 4.8 | -48 |
| Departmental Manager, Miscellaneous | 104 | 4.8 | 104 | 4.8 | 0 |
| Maintenance Manager | 40 | 1.6 | 72 | 8.1 | 32 |
| Resident Manager | 8 | * | 16 | * | 8 |
| Credit Manager | 24 | | 46 | | 22 |
| Mortgage & Loan Officers | 87 | 6.4 | 173 | 12.9 | 86 |
| Superintendents | 72 | * | 120 | 4.8 | 48 |
| Supervisors | 232 | 4.8 | 360 | 6.4 | 128 |
| Supervisors/Section Leaders | 23 | | 23 | | 0 |
| TOTAL: | 3658 | | | | 1155 |

* Zero Variance (Range)

## TECHNICIAN OCCUPATIONS

| Job Classifications | Current Total | 95% Confidence Interval | 1977 Total | 95% Confidence Interval | Gro |
|---|---|---|---|---|---|
| Architectural Technician | 11 | | 28 | | 1 |
| Chemical Technician | 49 | | 51 | | |
| Commercial Artist | 16 | * | 40 | * | 2 |
| Commercial Graphics Artist | 51 | * | 76 | * | 2 |
| Computer Programmer, Business | 69 | * | 106 | * | 3 |
| Computer, Scientific & Technical | 14 | | 22 | | |
| Decorator. Interior | 11 | * | 12 | * | |
| Designer, Interior | 12 | * | 13 | * | |
| Dental Technician | 32 | * | 48 | * | 1 |
| Dental Assistant | 24 | 1.6 | 40 | 4.8 | 1 |
| Draftsman, Building Trades | 111 | 3.2 | 137 | 3.2 | 2 |
| Draftsman, Mechanical | 103 | * | 156 | * | 5 |
| Electrical & Electronics Technician | 86 | | 110 | | 2 |
| Electronics Engineering Technician | 80 | * | 98 | * | 1 |
| Engineering Technician, Civil | 71 | * | 84 | * | 1 |
| Engineering Technician, Electrical | 36 | | 54 | | 1 |
| Engineering Technician, Mechanical | 35 | * | 47 | * | 1 |
| Engineering Technician, Safety | 21 | * | 26 | * | |
| Environmental Engineering Technician | 2 | | 6 | | |
| Food Processing Technician | 45 | * | 61 | * | 1 |
| Interior Design Technician | 1 | | 1 | | |
| Marine Technician | 0 | | 0 | | |
| Medical Technician | 18 | * | 22 | * | |
| Ornamental Horticulture Technician | 57 | 8.1 | 90 | 11.3 | 3 |
| Printing Trades Craftsman | 229 | 3.2 | 252 | 4.8 | 2 |

(continued)

## TECHNICIAN OCCUPATIONS (continued)

| Job Classifications | Current Total | 95% Confidence Interval | 1977 Total | 95% Confidence Interval | Growth |
|---|---|---|---|---|---|
| Registered Nurse | 512 | * | 603 | * | 91 |
| Science Technician (Lab) | 12 | * | 24 | * | 12 |
| Surveyor | 41 | * | 41 | * | 0 |
| Beauticians, Cosmeticians | 364 | 6.4 | 476 | 12.9 | 112 |
| Operating Room Technician | 4 | | 10 | | 6 |
| Hospital Attendants | 41 | * | 48 | * | 7 |
| Veterinary Assistants | 16 | * | 16 | * | 0 |
| Inhalation Therapists | 72 | * | 144 | * | 72 |
| Exterminators | 80 | * | 160 | * | 80 |
| Non-Destructive Technicians (Radiography) | 4 | | 10 | | 6 |
| Mass Media (Advertising, Photography, Announcing) | 106 | * | 187 | * | 81 |
| Film Technician | 24 | * | 56 | 8.1 | 32 |
| Composer | 1 | | 10 | | 9 |
| Estimators | 14 | * | 18 | * | 4 |
| Custom Design Engineering | 8 | * | 16 | * | 8 |
| Funeral Director, Embalmers | 336 | 14.5 | 360 | 14.5 | 24 |
| Barbers | 56 | * | 80 | * | 24 |
| Dry Cleaning | 88 | 8.1 | 128 | 12.9 | 40 |
| Compositors | 32 | * | 56 | * | 24 |
| TOTAL: | 2995 | | 4023 | | 1028 |

* Zero Variance (Range)

## SALES OCCUPATIONS

| Job Classifications | Current Total | 95% Confidence Interval | 1977 Total | 95% Confidence Interval | Growt |
|---|---|---|---|---|---|
| Salesmen | 5691 | | 7246 | | 1555 |
| Counter Sales | 576 | 31.0 | 696 | 35.4 | 120 |
| Route Men | 64 | * | 72 | * | 8 |
| Distributors | 16 | * | 48 | * | 32 |
| Dealers | 8 | * | 16 | * | 8 |
| TOTAL: | 6355 | | 8078 | | 1723 |

* Zero Variance (Range)

# CLERICAL OCCUPATIONS

| Job Classifications | Current Total | 95% Confidence Interval | 1977 Total | 95% Confidence Interval | Growth |
|---|---|---|---|---|---|
| Accounting Clerk | 557 | 8.1 | 733 | 12.9 | 176 |
| Bookkeeper, Hand | 399 | 4.8 | 511 | 8.1 | 112 |
| Collector & Adjuster | 150 | 3.2 | 189 | 3.2 | 39 |
| Computer Operator | 105 | | 141 | | 36 |
| File Clerk | 157 | * | 197 | * | 40 |
| General Clerk | 1515 | 4.8 | 1694½ | 6.4 | 179½ |
| Office Machine Operator | 101 | | 117 | | 16 |
| Payroll and/or Timekeeping Clerk | 137 | | 166 | | 29 |
| Peripheral EDP Equipment Operators | 18 | | 33 | | 15 |
| Personnel Clerk | 79 | * | 111 | * | 32 |
| Receptionist | 1569½ | 249.6 | 1833½ | 288.2 | 264 |
| Secretary, Executive & General | 1912 | 16.1 | 2671 | 33.8 | 759 |
| Secretary, Legal | 104 | * | 154 | * | 50 |
| Secretary, Medical | 80 | 4.8 | 82 | 4.8 | 2 |
| Stenographer | 543 | * | 617 | * | 74 |
| Switchboard Operator-Receptionist | 125 | | 143 | | 18 |
| Accountant | 8 | * | 24 | 1.6 | 16 |
| Administrative Clerk | 8 | * | 8 | * | 0 |
| Cashier | 100 | 4.8 | 124 | 4.8 | 24 |
| Teller | 193 | 11.3 | 295 | 22.5 | 102 |
| Employment Counselor | 168 | 8.1 | 320 | 16.1 | 152 |
| Travel Counselor | 64 | * | 72 | * | 8 |
| Ticket Agent | 8 | * | 8 | * | 0 |
| Copywriter | 8 | * | 16 | * | 8 |
| Proofreader | 26 | * | 34 | * | 8 |

(continued)

## CLERICAL OCCUPATIONS (continued)

| Job Classifications | Current Total | 95% Confidence Interval | 1977 Total | 95% Confidence Interval | Growth |
|---|---|---|---|---|---|
| Production Clerk and/or Coordinator | 80 | | 103 | | 23 |
| Shipping and/or Receiving Clerk | 321½ | 1.7 | 429½ | 14.5 | 108 |
| Stock Clerk | 359½ | 6.4 | 470 | 9.7 | 110½ |
| Inventory Clerk | 57½ | * | 65 | * | 7½ |
| Data Processing | 3 | | 3 | | 0 |
| Traffic-Rate Clerks | 30 | | 40 | | 10 |
| Key Punch | 24 | | 28 | | 4 |
| Teletype Peripheral Operator | 14 | | 14 | | 0 |
| TOTAL: | 9024 | | 11,446½ | | 2422½ |

* Zero Variance (Range)

# PRODUCTION (PLANT) OPERATIONS

| Job Classifications | Current Total | 95% Confidence Interval | 1977 Total | 95% Confidence Interval | Growth |
|---|---|---|---|---|---|
| Foremen, Non-working | 822 | * | 884 | * | 62 |
| Inspector | 481 | | 411 | | -70 |
| TOTAL: | 1303 | | 1295 | | -8 |

* Zero Variance (Range)

# Appendix D

This appendix presents a system for making a ten-year forecast of employment based on data derived from the survey of business and industry.

## SYSTEM FOR TEN-YEAR FORECAST OF TOTAL EMPLOYMENT

The suggested forecasting procedure is based on the following assumptions:

(1) Employment by job classification surveys will be made approximately every 3 years,

(2) Respondents will be asked to report current employment and projected employment 5 years from the date of the survey,

(3) Forecasts will not be made by computer,

(4) The forecasting procedure must be simple enough to be understandable to the statistically unsophisticated user.

With respect to assumption 3 it should be noted that should forecasts be eventually made by computer it would be possible, and desirable, to incorporate a substantially more sophisticated forecasting system. Such a system might, for example, incorporate a series of predictor variables such as new plant construction.

The problems inherent in projecting total employment in 1972 are illustrated in the accompanying figure.* The difficulty is that, at present, only two data points are available (employment in 1972 and estimated employment in 1977). Without additional information each of the three total employment curves is equally plausible. Therefore a simple linear extrapolation is recommended. Estimated employment in 1982 is simply the sum of (1) estimated employment in 1977, and (2) the difference between estimated employment in 1977 and reported employment in 1972. Symbolically

$$\hat{E}_{82} = \widetilde{E}_{77} + (\widetilde{E}_{77} - E_{72})$$

where $\hat{E}_{82}$ = Forecasted Employment in 1982.

$\widetilde{E}_{77}$ = Estimated Employment in 1977.

$E_{72}$ = Reported Employment in 1972.

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* Page D-6

Separate estimates would be made for each job classification.

By following the recommended updating procedures with additional surveys, there will be more than two data points available and it will be possible to estimate rates of increase or decrease. To illustrate the procedure consider the planned 1975 survey. Four employment estimates at various points in time will be available: (1) reported employment in 1972 and estimated employment in 1977 from the 1972 survey and (2) reported employment in 1975 and estimated employment in 1980 from the 1975 survey. Given this data employment in 1985 may be estimated as follows:

$$\hat{E}_{85} = \tilde{E}_{80} + \left[ 5 \cdot \left( \frac{MC_2}{MC_1} \right) \cdot MC_2 \right]$$

where $\hat{E}_{85}$ = Forecasted Employment in 1985

$\tilde{E}_{80}$ = Estimated Employment in 1980

$MC_2 = (\tilde{E}_{80} -- E_{75})$ /5 = Estimated Annual Mean Change in Employment Between 1980 and 1975.

$MC_1 = (E_{75} -- E_{72})$ /3 = Estimated Annual Mean Change in Employment Between 1975 and 1972.

The term $\left( \frac{MC_2}{MC_1} \right)$ captures the growth trend in total employment. In the analysis of synthetic data (i.e. data constructed for the purpose of testing the predictive power of the forecasting method) this method performed very well.

The above forecast does not make use of estimated employment in 1977 (obtained in the 1972 survey). This estimate was omitted because it was felt that forces such as growth in national income, structural shifts in the economy, ad infinitum, would very likely have altered both the shape and level of the growth curve.

In all future years the forecasting procedure would remain the same. Symbolically:

$$\hat{E}_{t + 10} = \tilde{E}_t + \left[5 + 5\cdot\left(\frac{MC_2}{MC_1}\right) MC_2\right]$$

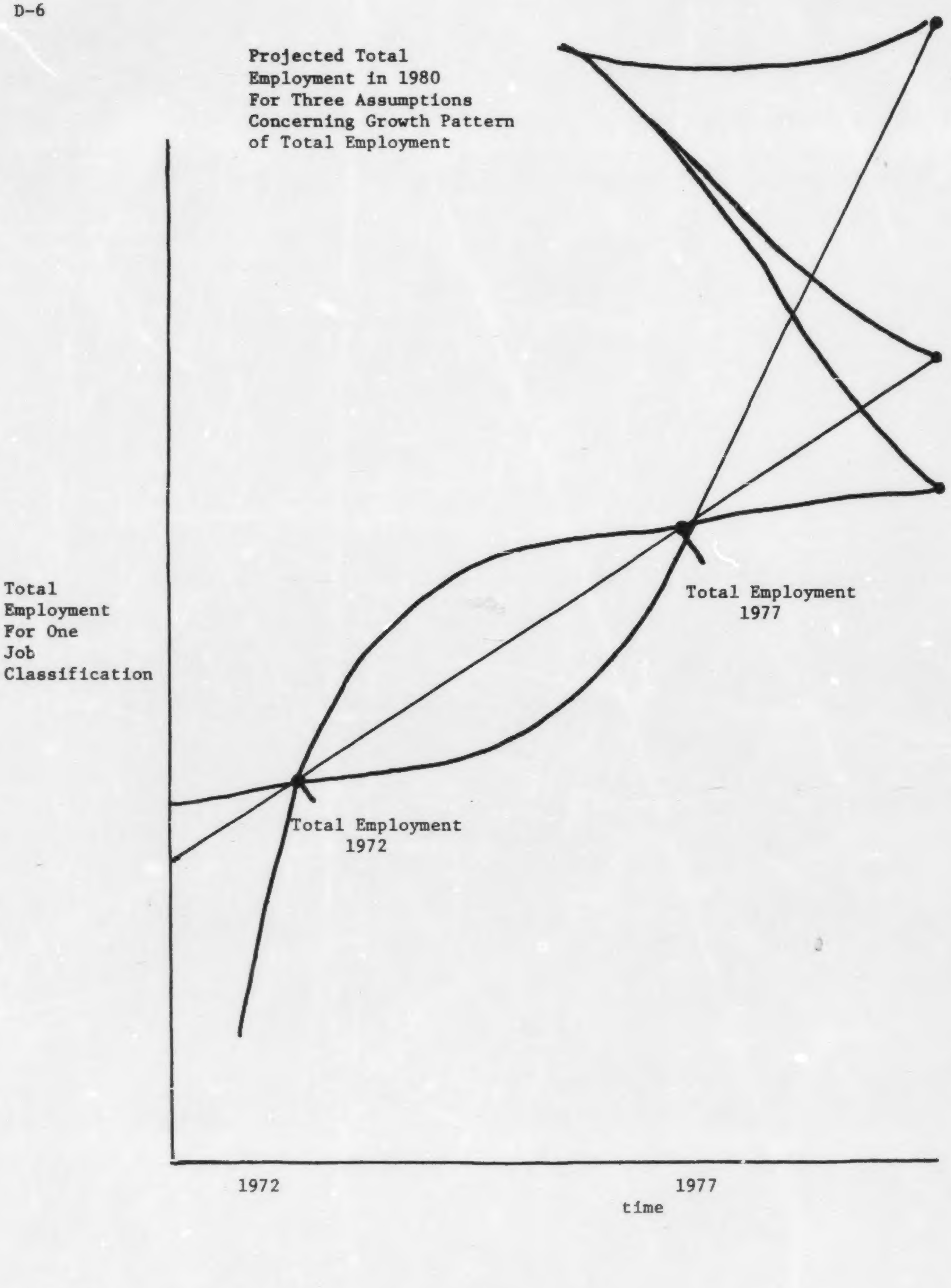
where $MC_2 = (\tilde{E}_{t + 5} - E_t)$ /5 - note that should the time between estimates change the only change would be in the divisor which is used to give the average change

$MC_1 = (E_t - E_{t-3})$ /3 - same note as above

$\tilde{E}_t + 5$ = Estimated Employment 5 years from survey date

$\tilde{E}_t + 10$ = Forecasted Employment 10 years from survey date

In future years a string of reported current employment figures will be available. With a computerized forecasting system it would be possible to utilize relatively sophisticated models. It would also be possible to assess the accuracy and stability of the forecasting model. The logical and computational complexities of such procedures, however, are such that it is not feasible to implement these procedures for the present problem without the aid of a computer. All of these estimates should be kept on the data base form provided in the manual.



Projected Total Employment in 1980 For Three Assumptions Concerning Growth Pattern of Total Employment

# Appendix E

This appendix presents an example of a student follow-up form which may be economically reproduced as an alternative to the professionally printed form illustrated in Chapter III.

Dear Former Student,

The staff of Forsyth Technical Institute is conducting a follow-up study of all students who left Forsyth Technical Institute during the past school year. We ask that you complete the questionnaire below and return it in the stamped envelope which is enclosed. This information will be of great value to Forsyth Technical Institute in planning for future students. Your cooperation is appreciated.

Sincerely,

Marcus Allred, Director
Occupational Information Center

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CONFIDENTIAL

FORSYTH TECHNICAL INSTITUTE
STUDENT FOLLOW-UP

DATE_______________
CURRICULUM NO._____

Name________________________________________ Soc. Sec. No.________
(Last) (First) (Middle)

Address__________________________________________________
Number/Street City/State Zip Code

Employer (Name of Company)______________________________________

Company Address______________________________________________
Number/Street City/State Zip Code

Job Title____________________________________________________

Approximate monthly salary_______________________

Did F.T.I. training help you in performing the above job? Yes___ No___

If not employed, what is your present status? _______________________

____________________________________________________________

Any comments you wish to make:______________________________________

____________________________________________________________

____________________________________________________________

## Appendix F

This appendix provides a summary "D.O.T." definition for each of the occupations listed in the business and industry survey.

## SUMMARY OF D.O.T. DEFINITIONS OF SURVEYED OCCUPATIONS[1]

### A. SERVICE OCCUPATIONS

330.371 Barber. Cuts, trims and tapers hair, using clippers, comb, and scissors. Shaves beard. Dyes, shampoos, styles hair. Massages face, neck, or scalp. Sells cosmetics.

322.271 Beautician and Cosmetician. (Cosmetologist). Suggests coiffure; styles hair, using clippers, scissors, and razors. Shampoos and rinses hair. Sets hair with waving solution, using rollers, clips or pins. Applies bleach, dye, or tint. Suggests cosmetics. Applies facials, massages scalp and gives hair and scalp conditioning treatments. Gives manicures.

### COUNSELORS

166.268 Employment Counselor. (Employment Interviewer). Interviews job applicants in employment agency and refers them to prospective employers for consideration. Records and evaluates such information as job experience, education and training, skills, physical and personal qualifications. Contacts employers to verify referral results. May administer tests.

166.268 Personnel Counselor. See Employment Counselor.

237.168 Travel Counselor. Plans trips for members of automobile clubs. Marks suitable routes from point of origin to destination. Indicates points of interest, restaurants, hotels, and emergency repair services available. Reserves motel or resort accomodations. Calculates mileage and may estimate travel expenses. Informs patrons of bus, ship, train, and plane connection.

373.884 Fire Service Worker. (Fire Fighter). Controls and extinguishes fires, protects life and property, maintains equipment as volunteer or employee of city, township, or industrial plant. Responds to fire alarms and emergency calls. Directs water or chemical on fire. Positions and climbs ladders to assist persons from burning structures. Creates openings in buildings for ventilation. Administers first aid. Inspects buildings for compliance with fire prevention ordinances. Maintains equipment, hydrants, etc. Participates in drills, firefighting techniques, etc. May fill fire extinguishers.

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[1] Dictionary of Occupational Titles, Vol. 1: Definitions of Titles, 3rd Edition. Washington, D.C.: U.S. Department of Labor, Manpower Administration, Bureau of Employment Security, 1965. (All definitions in this report are summarized from the Dictionary of Occupational Titles.)

## FOOD SERVICE WORKERS

| | |
|---|---|
| 312.878 | Bar Tender. Mixes and serves alcoholic drinks. Serves wine and beer. Collects money for drinks. Orders supplies. Places bottled goods and glasses to make attractive display. May prepare appetizers. |
| 316.884 | Butcher. (Meat Cutter). Cuts, trims meat for display or customer order. Cleans, cuts fish and poultry. Wraps and weighs meat for customers; may collect money. |
| 313.131 | Chef. Supervises cooks and other kitchen personnel engaged in preparing and cooking food. Estimates food consumption and purchases foodstuffs. Selects and develops recipes. May employ, train, and discharge workers. May plan menus. |
| 313.381 | Cook, Trained. Prepares, seasons, cooks food. Estimates food requirement and orders food. Adjusts thermostat on ovens, grills, etc. Observes and tests cooking food. May supervise other kitchen employees. May butcher meat, may price items on menu. |
| 310.868 | Hostess. Welcomes and seats patrons. Schedules reservations, adjusts complaints. Arranges parties. May hire and discharge dining room personnel. May requisition linen and other supplies. Inspects service areas for neatness and cleanliness. |
| 311.878 | Waitress. Serves food. Presents menus and answers questions. Writes order on check; relays order to kitchen. Observes guests to fulfill requests and to perceive when meal is finished. Totals bill; may accept payment. Clears and resets tables. |
| (No Number given) | Foreman, Non-working. Supervises and coordinates activities of workers. Studies production schedules and estimates manhour requirements. Interprets company policy. Analyzes and resolves work problems. Initiates plans to motivate workers to achieve work goals. Recommends promotions, transfers, discharges, and disciplinary measures. Train new workers. May inspect materials or set up equipment. Possesses general knowledge of activities involved. |

## MEDICAL WORKER

| | |
|---|---|
| 355.878 | Hospital Attendant. (Nurse Aid). Answers patients' signal lights. Bathes, dresses patients. Serves food trays, feeds patients. Transports patients to treatment units. Prepares patients for examinations and treatments. Changes bed. Takes, records temperature, pulse and respiration rates, food and liquid intake and output. May clean, sterilize, store, and prepare supplies, including surgical supplies. May assist in delivery room and nursery. |

354.878 Nurse, Practical. Cares for patients and children in private homes, hospitals, sanitariums, industrial plants, etc. Bathes, dresses, and attends bed patients. Cleans room; changes bed. Takes, records temperature, pulse and respiration rate. Gives and records medication as directed. Sterilizes equipment and supplies. Prepares food trays, feeds patients, records food and liquid input and output. May have housekeeping duties. May give injections.

355.878 Nursing Assistant. (See Hospital Attendant.)

## LAW ENFORCEMENT

377.868 Deputy Sheriff. Enforces laws and serves legal processes of courts. Patrols specified area. Escorts prisoners to and from courtroom or prison, subduing unruly prisoners.

375.268 Police Occupations, (Patrolman). Patrols assigned beat. Notes suspicious persons or establishments and reports them to superior officer. Disperses unruly crowds at public gatherings. Reports to scene of accidents, gives first aid, and investigates causes and results of accident. Directs traffic around disruptions. Warns or arrests persons violating ordinances. Issues traffic tickets. Files daily activity report. Registers at police call boxes at specified intervals.

372.868 Security Service Worker, (Watchman). Guards industrial or commercial property against fire, theft, vandalism, and illegal entry. Tours buildings and grounds periodically. Examines doors, windows and gates. Inspects equipment and machinery for evidence of tampering. Reports irregularities such as fire hazards of leaking water pipes. Observes departing personnel to guard against theft. Permits authorized persons to enter. May perform janitorial duties. May tend furnace or boiler.

955.782 Waste Control Operator. (Sewage-Plant Operator). Monitors control panels and adjusts valves and gates to regulate flow of sewage. Starts and stops pumps, engines, and generators to control raw sewage through settling, aeration, and sludge digestion processes. May extract sewage samples and perform lab tests. Keeps log of operations and records meter and gage readings.

## MISCELLANEOUS:

915.867 Filling Station Worker. (Automobile Service-Station Attendant). Services automotive vehicles. Fills fuel tanks. Observes oil level in crankcase and amount of water in radiator; may add oil or water. Washes windshields. Lubricates vehicle and changes motor oil. Replaces accessories (fan belt, oil filter, wiper blades, etc.). Installs antifreeze. Repairs or replaces tires. Washes and waxes vehicles. May adjust brakes. May sell batteries and other accessories. Collects payment for services.

382.884 Janitor. Keeps building in clean and orderly condition, and tends to heating system. Sweeps, mops. Regulates flow of fuel, empties trash and garbage. Performs painting, plumbing, electrical wiring, and other maintenance activities. Notifies management concerning need for major repairs. Cleans snow and debris from sidewalk. Maintains lawn, flowers, shrubbery. May reside on property.

## B. MAINTENANCE, CONSTRUCTION, AND REPAIR OCCUPATIONS

861.381 Brickmason (Bricklayer). Lays building materials, such as brick, tile, concrete cinder, etc., to construct or repair walls or other structures. Measures distance and marks guidelines on working surface. Spreads a base of mortar with trowel. Finishes mortar between brick. Determines vertical and horizontal alinement of courses.

860.381 Carpenter. Constructs and repairs structures of wood. Studies blueprints. Selects type of lumber and other materials and marks cutting and assembly lines on them. Shapes materials. Puts together with nails, glue, etc. Builds framework, subflooring, stairs, partitions, and cabinets. Installs prefabricated window and door frames, trim, weather stripping, locks, etc. Erects scaffolding for structures above ground level.

844.884 Concrete Finisher. Smoothes and finishes surfaces of poured concrete floors, walls, sidewalks, and curbs. Removes defective spots and patches. Molds expansion joints and edges. May operate machine to trowel; may mix cement.

824.281 Electrician. Plans layout and installs and repairs wiring, electrical fixtures, apparatus, and control equipment. Prepares sketches showing location of wiring and equipment or follows blueprints. Measures and installs electrical conduit; pulls wiring through conduit. Splices wires, connects wiring to lighting fixtures and power equipment. Installs switches, relays, circuit-breaking panels, and grounding leads. Observes functioning of installed system to detect hazards or need for adjustment. May repair faulty equipment or systems. May be required to hold license.

829.887 Electrician's Helper. Measures, cuts, bends wire and conduit. Drills holes for wiring. Helps lift, position, and fasten objects. Performs minor repairs, such as replacing fuses, bulbs, and switches. Keeps equipment, supplies, and parts in order. Disassembles defective electrical equipment.

407.884 Groundskeeper. Cuts lawns, trims around walks, flowers, and walls. Prunes shrubs and trees. Sprays with fertilizier or insecticide. Rakes leaves, cleans up litter. Shovels snow. Plants grass, flowers, trees, shrubs. Waters lawn and shrubs. Repairs fences, gates, walls, and walks. Paints fences and outbuildings. Cleans drainage ditches and culverts. May operate lawn machinery such as tractor.

863.884 Insulationist. (Insulation Worker). Applies insulating material to exposed surfaces of equipment. Binds wire netting around object to keep insulation in place. Clips metal bands to pipe insulation. On flat surfaces, spot welds or screws wire studs to surface and attaches insulation to studs. Brushes waterproofing cement over surface. Coats joints with cement and seals with tape.

821.381 Lineman. Erects poles, towers, and cable to construct transmission and distribution powerlines. Directs groundmen in attaching crossarms, insulators, switches, lightning arresters, conductors, etc., to poles before erection. Installs transformers. Strings conductors between poles. Splices, insulates, and solders wiring.

Transfer Line Operator. No listing available.

## MACHINE OPERATOR

681.280 Fixer. Sets up and adjusts yarn machines. Adjusts and changes gears, pulleys, rollers, and guides. Patrols work area to detect operating defects. Replaces worn and broken parts. Lubricates moving parts. May overhaul machines.

699.887 Machine Cleaner. Cleans dust, grease, and lint from machines and other equipment. May remove machine parts. May paint exposed surfaces. May oil moving parts. May clean floors around machine.

600.280 Machine Shop Trainee. Apprentice who trains on the job to become a machinist. See Machinist.

007.187 Machine Tool Part Programmer. (Tool Programmer, Numerical Control). Plans program to control machining of metal parts by automatic machine tools utilizing magnetic tape, punched tape, and punched cards. Analyzes blueprints for dimension and configuration of cuts. Determines type of tool and position of metal stock. Prepares program sheet for key-punch. Plots cutter center paths on graph paper. Observes machining of first part to verify accuracy of programing.

600.280 Machinist. Sets up and operates machine tools; fits and assembles parts to make or repair metal parts, tools, mechanisms, or machines. Studies specifications and plans sequence of operations. Operates lathe, milling machine shaper, or grinder. Verifies dimensions and alinement. May observe operation or test it with inspection equipment.

600.280 Machinist, Maintenance. Diagnoses causes of malfunctions in industrial machines, sets up and operates machine tools to repair or make machine parts, and installs parts to correct malfunctions. Dismantles machine to examine parts for defects. Assembles and starts machine to verify correction or malfunction.

899.281 Maintenance Man, General Utility. (Maintenance Man, Factory). Repairs and maintains machinery, plumbing, physical structure, and electrical wiring and fixtures of commercial and industrial establishments. Makes and repairs counters, benches, and partitions. Paints, inspects, cleans, lubricates, and dismantles machinery. Installs pipes and tubing. Unclogs drains.

## MECHANIC (EXCEPT MOTOR VEHICLE)

825.281 Electrical Mechanic. (Electrical Repairman-Wireman, Maintenance). Maintains and installs wiring connections, working from blueprints. Installs and connects high-tension cables. Tests installation of equipment. May rig scaffolds and hoisting equipment. May repair fans, motors, blowers, etc.

637.281 Heating and Air Conditioning Mechanic. Installs, services, and repairs commercial and domestic air conditioning units and forced-air heating systems. Mounts compressor and condensor; fabricates and installs ductwork and chassis; installs evaporator unit. Cuts and bends tubing; cuts and threads pipes. Joins tubing or pipes to refrigerating units. Installs expansion and discharge valves. Installs air and water filters. Tests systems.

638.281 Maintenance Mechanic. Repairs and maintains, according to manuals, diagrams, etc., machinery and mechanical equipment. Observes devices in operation to locate cause of trouble. Dismantles devices to repair or replace defective parts. Starts devices to test performance. Lubricates and cleans parts. May make or order parts.

633.281 Office Machines Mechanic. Operates machines to locate trouble. Disassembles machine and repairs or replaces parts. Cleans and oils moving parts. Gives instruction for operation and care to machine operator. May assemble new machines.

721.281 Small Motor Mechanic. (Electric-Motor Repairman). Repairs fractional-horsepower electric motors. Dismantles defective motors; tests coils and cuts out defective coil windings. Cuts and forms sheet insulation and inserts. Makes replacement coils, rewinds, inserts, and connects coils by solder or torch.

638.281 Millwright. Installs machinery and equipment according to blueprints or other drawings. Dismantles and moves machinery on dollies, rollers, trucks, or hoists. Assembles and installs equipment. Constructs foundation for machines. Alines and assembles machines and fastens them to foundation. May repair and lubricate machines and equipment.

806.884 Mobile Homes and Campers Worker. (Mobile Home Installer). Installs partitions, doors, cabinets, appliances, trim and flooring. Uncrates and inspects materials. Outlines installation areas from blueprints. Connects water lines. Connects gasline. Connects wiring.

## MOTOR VEHICLE SERVICE AND REPAIR

299.287 Appraiser. Appraises automobile to determine cash value or trade-in allowance. Examines for repairs needed. Consults guide books for prevailing prices for buying and selling cars. Quotes trade-in allowance to customer.

620.281 Automotive Mechanic. Examines vehicle and reports to customer. Raises vehicle and removes and disassembles necessary units. Repairs, rebuilds, or replaces parts. Rewires ignition system , lights, instrument panel. Relines and adjusts brakes, alines front end. Hammers out or fills in dents and welds broken parts. Installs and repairs accessories.

807.381 Automotive Body Repair Mechanic. Examines damaged parts and estimates cost. Removes upholstery, accessories, etc., to gain access to body and fenders. Hammers out dents. Fills depressions with solder. Removes and replaces excessively damaged parts. Files, grinds, sands, and paints repaired surfaces.

625.281 Diesel Mechanic. Diagnoses trouble and disassembles engines. Examines parts for defects. Repairs and replaces parts.

625.884 Diesel Mechanic Helper. Assists in overhauling and maintaining diesel motors. Disassembles motor and clean parts. Obtains parts from stock and hands tools to mechanic. Assists in reassembly and cleans tools.

807.287 Service Writer. (Shop Estimator). Estimates cost of repairing damaged vehicles, on basis of visual inspection and familiarity with standard parts and labor costs. Determines whether parts will be repaired or replaced. Enters itemized estimate on job order card and explains estimate to customer.

559.885 Tire Recapper. Tends machines that recap and retread tires for reuse. Inspects tires to determine if suitable for recapping; rejects tires damaged beyond repair. Pushes tire against power buffing wheels to prepare for recapping. Builds new tread onto buffed casing, applying rubber cement. Tends mold that vulcanizes tread onto tire. Inflates air bag within tire.

620.281 Transmission Specialist. Repairs manual and automatic transmissions in automobiles, buses, trucks, etc. Disassembles unit and repairs or replaces worn parts. Adjusts pumps, bands, and gears. Installs repaired unit and fills with specified fluid. Adjusts operating linkage and tests operation on road.

862.281 Oil Burner Man. (Oil-Burner-Installation-and-Service-Man). Assembles and positions oil-storage tank between furnace and wall. Drills holes in wall and affixes pipes. Installs and seals burner in furnace. Installs thermostatic control and damper in chimney. Observes flame and smoke emitted to determine cause of faulty operation. Examines flue draft.

840.884 Painter. (Painter, Rough). Applies paint, varnish, or enamel to industrial structures. Removes old paint, cleans surface first. May mix paints and match colors. May use brush, roller, or spray gun.

862.381 Plumber and/or Pipefitter. Assembles, installs, and repairs pipes, fittings, and fixtures of heating, water, and drainage systems. Studies building plans and structure first. Locates and marks position of pipes. Cuts openings in walls and floors. Cuts and threads pipes. Joins pipes. Fills pipe system with water or air and reads pressure gages. Installs and repairs plumbing fixtures, such as sinks, commodes, bathtubs, garbage disposals, and dishwashers.

## REPAIRMAN

710.281 Instrument Repairman. Installs, repairs, and adjusts indicating, recording, telemetering, and controlling instruments used to measure and control pressure, flow, temperature, force, motion, chemical composition, etc. Disassembles instrument, examines mechanism and repairs or replaces defective parts. Inspects instruments periodically.

710.281 Radio and TV Repairman. (Television Service-and Repairman). Tunes receiver on all channels and observes audio and video to locate trouble. Adjusts controls; examines chassis. Tests and changes tubes. Solders loose connections and replaces defective parts. Tests voltage and resistance to circuits.

365.381 Shoe Repairman. Positions shoe on last and pulls or cuts off sole or heel. Cuts new sole or heel and roughens the welt. Brushes cement on new piece and on welt. Puts new piece on and pounds it with hammer and drives nails. May sew with machine; attaches cleats. Buffs. Restitches ripped portions; may patch. Stretches shoes by dampening. May build up portions of shoes. May repair other leather, canvas, or plastic goods, such as purses, belts, and luggage.

741.887 Sander. (Painter Helper, Spray). Cleans and prepares surfaces to be painted, using solvent, sandpaper, wire brush, and scraper. May assist spray painter in duties described under sprayer.

804.281 Sheet Metal Worker. Selects gage and type of sheet metal. Locates and marks dimension and reference lines. Sets up and operates fabricating machines to cut, bend, and straighten sheet metal. Sets up and operates soldering and welding equipment. Smooths seams and joints. Inspects assemblies and installations.

741.884 Sprayer. (Painter, Spray). Cleans product, applies masking tape. Fills cavities and dents with putty. Selects and mixes coating liquid and pours into spray container. Connects gun to airhose, turns sprayer valves and nozzle. Pulls trigger and directs spray onto work surface. Uses brush on areas inaccessible to spray.

950.782 Stationary Engineer. Operates stationary engines and mechanical equipment, such as compressors, generators, and steam boilers to provide utilities for buildings and industrial processes. Reads meters and gages, records data. May be required to hold license. May oil and lubricate equipment. May repair machines and equipment.

601.280 Tool and Die Maker. Analyzes specifications, lays out metal stock, sets up and operates machine tools, and fits and assembles parts to make and repair metalworking dies, cutting tools, jigs, fixtures, gages, and machinists handtools.

609.380 Turbine Blade Grinder. (Turbine Blade Assembler). Measures tenon location on blades and selects two blades with equal tenons for end blades of section. Sets up and operates milling machines and pedestal grinders to grind and mill blade roots. Inserts blades into grooves and pounds metal calking into groove. Shapes cylinder blade locking device and fits it to pocket of blade and smooths surfaces. Fits shroud over blade ends.

841.781 Wallpaperer. (Paperhanger). Cleans interior wall surface. Applies acetic acid to prevent lime from bleeding through paper. Applies sizing to waterproof porous surfaces. Measures and cuts strips of paper or fabric. Places strips on wall, and smooths it with dry brush or roller. May remove old paper. May paint.

842.781 Plasterer. Mixes plaster. Spreads it over lath or masonry base, using trowel, and smooths it for uniform thickness. Roughens undercoat to provide bond for other coats. Creates decorative textures in finish.

816.781 Tile Layer. (Tile Setter). Marks surface. Measures and cuts lath and tacks to wall. Spreads plaster base over lath. Spreads concrete over subfloor and mastic over roof deck. Cuts, shapes, and positions tiles.

816.884 Welder, Flamecutter. (Flamecutter, Hand). Connects hoses from torch to oxygen tank and fuel gas tank. Selects torch tip, gas pressures, and speed. Lights torch and adjusts flow of oxygen. Directs flame on work piece to heat it to oxidizing temperature. Releases additional jet of oxygen which burns path through metal. Chips or grinds burrs from edges.

## C. MANAGERS

164.068 Advertising Trainee. (Advertising Assistant). Assists in planning advertising program to promote sale of company's products. Consults with company officials, sales department, and advertising agency. Prepares brochures and manuals for publication. Reviews and proofreads layout and copy. May write copy, do layout work, prepare sales kits, and set up displays.

359.878 Day Care Teacher. Organizes games, reads to children, and teaches them simple activities. Directs eating, resting, and toileting. Helps children develop habits of caring for clothing and toys. Maintains discipline. May assist in preparing food and cleaning quarters.

Field Operations Specialist. No listing available.

Foreman. See Foreman, Non-working under SERVICE OCCUPATIONS.

## MANAGER

Assistant Manager. Assists manager in duties listed under Foreman.

183.118 Branch Manager. Directs production, distribution, and marketing operations for branch plant or assigned territory. Promotes improved and expanded services in area. Directs sales and personnel programs and preparation of accounting records.

168.168 Credit Manager. Investigates financial standing and reputation of prospective customers applying for credit. Supervises collection of bad accounts and worthless checks. May submit delinquent accounts to agency or attorney for collection.

### Department Manager

164.118 Advertising. Confers with department heads to determine advertising needs. Confers with newspaper, radio, TV, and billboard officials to negotiate contracts. Supervises those making up and illustrating advertisements.

219.338 Budget. (Budget Clerk). Reviews records of sales and operating expenses. Compiles tables of revenues and expenses. Writes justification for overrun or underrun of budget estimates. Makes interdepartmental comparisons and indicates trends. Prepares financial statement showing profit and loss.

166.118 Personnel and Training. Organizes recruitment, selection, and training procedures. Confers with company and union officials on pension, insurance and workman's compensation policies. Determines personnel suitable for promotion and transfer.

165.068 Public Relations. Plans and directs advertising and public relations program to promote favorable publicity and create good will for a business establishment. Writes news or human interest stories concerning company activities and personnel.

162.158 Purchasing. (Purchasing Agent). Purchases equipment, supplies, etc., for an organization. Reviews requisitions, interviews vendors, and negotiates for contracts. Keeps budget records. Inspects delivered goods for defects.

163.118 Sales and Distribution. Coordinates sales distribution in sales territories, with quotas and goals. Assists dealers through training. Reviews market analyses to determine customer needs, price schedules, and discount rates. Develops sales campaigns. Eliminates unprofitable items from sales line.

189.118 General Manager. (Manager, Industrial Organization). Determines and executes administrative policies; coordinates activities of departments. Plans and directs marketing of product. Develops personnel efficiency program. Reviews and alters programs in areas, such as purchasing, accounting, research, and cost.

981.138 Maintenance Manager. (Maintanance Foreman). Supervises and coordinates activities of workers engaged in keeping buildings and grounds in clean and orderly condition and in maintaining and repairing utility systems and physical structures of buildings.

169.168 Office Manager. Organizes office operations. Maintains efficient flow of work. Standardizes office procedures. Requisitions office supplies and equipment. Reviews clerical and personnel records. May participate in budget preparation.

189.118 Plant Manager. See General Manager.

187.168 Resident Manager. Directs and coordinates activities of hotel personnel to insure adherence to establishment's policies and objectives. Inspects reports, leases and other documents.

186.288 Mortgage and Loan Officer. Evaluates applications for lines of credit. Analyzes applicant's financial status, credit and property. Corresponds with and interviews applicants or creditors. Makes decision on loan request. May handle foreclosure proceedings.

162.158 Plant Buyer. See Purchasing Manager.

197.168 Superintendent. (Superintendent, Building). Hires, trains, and supervises building personnel. Plans sequence of maintenance work. Inspects property. Purchases supplies, furniture, equipment, and machinery. Plans budget.

## MISCELLANEOUS

153.228 Assistant Pro. (Golf Professional). Instructs novices and players in golf skills. Purchases, displays, sells, and repairs golf equipment. Keeps records of receipts and expenditures. Organizes tournaments. May advise construction and maintenance of golf course.

097.288 Instructor. (Vocational Training). Teaches vocational training subjects in school or industrial plant. Includes demonstration of skills required in trade and lectures on theory, practices, methods, and terminology. Supervises students in shop or laboratory work. May teach apprentice or trainee in industrial plant craft occupations.

120.108 Pastor. (Clergyman). Conducts religious worship and performs other spiritual functions as delegated. Prepares sermons and other talks. Interprets doctrine. Instructs incoming members. Conducts weddings, funerals, baptism, and confirmation. Visits sick, shut-ins, poor. Counsels. Oversees religious education programs. May teach in seminaries and universities.

## D. TECHNICAL OCCUPATIONS

141.081 Commercial Artist. (Illustrator). Draws and paints for advertisements, books, magazines, posters, billboards, and catalogs. Studies design layout and selects technique best suited for desired visual effect.

152.088 Composer. Invents melodic, harmonic, and rhythmic structures to express ideas musically within circumscribed musical form. Translates melodies, harmonies and rhythms into musical notes and records notes on scored music paper.

973.381 Compositor. Sets type by hand and machine, and assembles type and cuts in a galley, for printing articles, headings, and other printed matter. Prepares and examines proof copies. Cleans type after use and puts away.

020.188 Computer Programmer, Business. Converts symbolic statement of business problems to detailed logical flow charts for coding into computer language and solution by means of automatic data processing equipment. Observes and corrects program errors. Prepares written instructions to guide operating personnel.

020.188 Computer Programmer, Scientific and Technical. Converts scientific, engineering, and other technical problem formulations to format processable by computer. Prepares flow charts and decodes equations for processing. Observes and corrects program errors.

142.051 Decorator, Interior. (Interior Designer and Decorator). Analyzes functional requirements of furnishing interior, based on client's needs and preferences. Devises color scheme and arranges furniture and accessories. Estimates cost and amount of materials. Selects and purchases materials. Directs carpenters, painters, carpet layers, etc.

079.378 Dental Assistant. Records patient's personal information. Prepares patient for treatment. Arranges instruments, materials, and medications and hands to dentist. Keeps oral operating area clear during dental procedures. Prepares dental amalgam. Sterilizes and stores instruments. Explains postoperative care and oral hygiene to patients. Collects fees, schedules appointments, orders supplies, etc.

## DRAFTSMAN

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| 001.281 | Building Trades. (Architectural). Plans artistic architectural and structural features of buildings. Sketches designs, using drawing instruments. Makes engineering computations. Estimates quantities needed for project and computes cost. |
| 007.281 | Mechanical. Specializes in drafting detailed working drawings of machinery and mechanical devices, indicating dimensions and tolerances, fasteners and joining requirements, and other engineering data. Drafts multiple-view assembly and subassembly drawings for manufacture and repair. |
| 007.181 | Engineering Associate. (Engineering Assistant, Mechanical Equipment). Develops design drawings of mechanical equipment. Analyzes engineering sketches. Sketches rough layout of machine and computes angles, weights, dimensions, radii, clearances, tension, etc. Determines effect of design on such factors as temperature, pressures, speed, horsepower, and fuel comsumption. |
| 007.181 | Engineering Clerk. See Engineering Associate. |
| 007.181 | Engineer's Aide. See Engineering Associate. |
| 160.288 | Estimator. Prepares cost and work completion estimates for engineering contract bids; itemizes materials and price lists from blueprints; itemized equipment to be produced or purchased. Computes delivery dates and percentage profits. |
| 187.168 | Funeral Director. Arranges and directs funeral services. Interviews to arrange details. Plans placement of casket in parlor or chapel and arranges lighting and flowers. Leads funeral cortege to church or burial site. Directs shipment of body for out-of-state burial. |
| 338.381 | Embalmer. Washes and dries body. Packs body orifices with cotton and embalming fluid. Makes artery incision and pumps blood from body and replaces with embalming fluid. Withdraws blood and waste matter from organs and replaces with embalming fluid. Closes incisions. Reshapes disfigured or maimed bodies. Applies cosmetics. Dresses body and places in casket. |
| 079.368 | Inhalation Therapist. Sets up and operates oxygen equipment such as iron lungs, resuscitators, and incubators. Examines patients' charts and verifies identities with nurse. Gives instructions for procedure in event of adverse symptoms. Checks inhalant patients daily. Records cost of materials and equipment used. May instruct others in operation of equipment. |
| (No Number given) | Pressman. (Job-Press Man). Operates printing presses used for printing small sheets, usually in small quantities requiring frequent changes of press make-ready. |
| 973.381 | Printer. See Compositor. |

Printing Trades Craftsman. See Pressman, Printer.

075.378 Registered Nurse. (Nurse, General Duty). Administers medicine and treatment. Aids physician during treatment and examination of patients. Observes, records, and reports to supervisor patients' condition and reaction to drugs. May assist with operations and deliveries. May bathe and feed patients and make beds.

018.188 Surveyor. Surveys earth's surface and oversees engineering survey party engaged in determining exact location and measurements of points, elevations, lines, areas, and contours of earth's surface to secure data used for construction, mapmaking, land valuation, mining, etc.

017.281 Technical Illustrator. Lays out and draws illustrations for reproduction in reference works, brochures, and technical manuals dealing with assembly, installation, operation, maintenance, and repair of machines, tools, and equipment. Pastes instructions and comments in position on drawing.

### TECHNICIAN

Architectural Technician. No listing available.

Chemical Technician. No listing available.

Commercial Graphics Technician. No listing available.

712.381 Dental Technician. Constructs and repairs dental appliances from dentist's prescription. Fabricates dentures, using wax and plaster molds; constructs crowns, inlays, and wire frames by casting in mold; constructs porcelain teeth from impression. Polishes completed appliances.

003.181 Electrical and Electronics Technician. (Electrical Technician). Assembles and tests experimental electrical equipment. Modifies electrical prototypes to correct functional deviations. Diagnoses electrical or mechanical malfunction. Develops wiring diagrams and engineering specifications for system or equipment modification.

710.281 Electro Mechanical Technician. Fabricates, tests, analyzes, and adjusts precision electromechanical instruments. Operates metalworking machines. Assembles wires, insulation, and electrical components. Writes reports on techniques used.

003.181 Electronics Technician. Lays out, builds, tests, repairs and modifies developmental and production electronic equipment. Assembles experimental circuitry; recommends changes to simplify assembly and maintenance. Contrives test equipment. Analyzes and interprets test data. Writes technical report. May check out newly installed equipment in planes, ships, etc.

## ENGINEERING TECHNICIAN

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| 005.081 | Civil Engineer. Plans, designs, and oversees construction and maintenance of structures and facilities, such as roads, airports, bridges, dams, powerplants, and railroads. |
| (No Number given) | Custom Design Engineer. (Design Engineer). Analyzes product or equipment to conceive practical designs which can be produced by existing manufacturing facilities. Analyzes engineering proposals to determine feasibility. Provides technical information on manufacturing and construction. |
| 003.081 | Electrical Engineer. Performs engineering work in designing, planning, and overseeing manufacture, construction, installation, operation, and maintenance of electric or electronic components, equipment, systems, and machinery used in electrical energy. |
| 003.181 | Electronics Engineer. See Electronics Technician. |
| 003.281 | Environmental Engineer. (Instrumentation Technician). Devises, sets up, and operates electronic instrumentation and other apparatus involved in environmental testing of mechanical, structural, or electrical equipment. |
| 007.081 | Mechanical Engineer. Plans and designs tools, engines, and machines and oversees installation, operation, and maintenance and repair of such equipment. |
| 012.081 | Safety Engineer. Applies knowledge of industrial processes, mechanics, chemistry, psychology, and industrial health and safety laws to prevent or correct injurious environmental conditions and minimize effects of human traits which create hazards to life and property or reduce worker morals and efficiency. |
| 976.381 | Film Technician. (Developer). Mixes developing and fixing solutions. Immerses exposed film to bring out image. Immerses negative in stop-bath to arrest developer action, in hypo-solution to fix image, and in water to remove chemicals. Dries negatives and paints. May produce color photographs. |
| | Food Processing Technician. No listing available. |
| 078.381 | Medical Technician. (Medical-Laboratory Assistant). Performs routine tests in lab for use in diagnosis and treatment of disease. Prepares tissue samples, takes blood samples, and prepares vaccines; prepares urinalyses and blood counts. |
| 199.381 | Non-Destructive Technician. (Radiographer). Controls radiography equipment to take radiographs of metal castings, weldments, metal samples, pipes, machinery and structural members to detect flaws, cracks, porosity, and presence of foreign objects. |

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| 079.378 | Operating Room Technician. (Surgical Technician). Washes, shaves, and sterilizes operative area of patient. Scrubs hands and dons cap, mask, gown, and rubber gloves. Places equipment and supplies and arranges instruments. Maintains supply of plasma, blood, glucose and saline during operation. Adjusts lights. Sterilizes used equipment and cleans operating room. |
| 040.081 | Ornamental Horticulturist. Conducts experiments for improving ornamental plants in color or shape, increase in number of blooms, resistance to disease, and adaptability to conditions of shipping and storing. May specialize in flower culture or in culture and artistic planting and trimming of trees. |
| 078.381 | Science (Lab) Technician. See Medical Technician. |
| 952.782 | Utility Technician. (Power Plant Operator). Operates boilers, turbines, generators, and auxillary equipment. Monitors control boards and regulates equipment. Corrects abnormal conditions, such as loss of steam pressure. Notes malfunctions on log sheet. |

MISCELLANEOUS

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| 143.062 | Camera Man. (Photographer, Commercial). Photographs persons, sets, merchandise, etc., to be used in advertising and selling. Arranges lighting, screens, backdrops, etc. Mixes solutions and chemicals used in developing plates and films and printing positives. Enlarges prints. |
| 362.782 | Dry Cleaner. Sorts articles and places in cleaning machine. Puts cleaning solvent into drum of machine and starts drum rotation. Adds liquid soap or chemicals. Tends extractor and tumbler. May clean delicate or heavily soiled articles by hand. |
| 389.884 | Exterminator. Fumigates rooms and buildings. Places poisonous bait where pests are present. Cleans areas that harbor pests. Fumigates mattresses, clothing and upholstered furniture. |
| (No Number given) | Journalism Worker. An editor or writer engaged in editing or writing subject matter for newspaper or periodical. |
| 976.381 | Reproduction Equipment Operator. (Reproduction Technician). Duplicates, by photographic process, printed material, such as photographic positives and negatives, tracings, and documents, on sensitized paper, cloth, or film. Touches up and enlarges reprints. |

E. SALES OCCUPATIONS

Clerk

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| 223.387 | Parts Clerk. Receives, stores, and issues spare and replacement parts used in repair or maintenance shop. May drive truck to pick up stock. May sell auto parts to customers. |

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| 290.478 | Sales Clerk. Receives payment for merchandise selected by customer. Wraps or bags merchandise. Keeps shelves stocked. May keep record of sales. |
| 298.081 | Display Trainee. (Display Man). Displays merchanidse in showcases and on sales floor to attract attention. Constructs decorative properties and arranges them according to prearranged plan or using own ideas. Places price and descriptive signs around display. May dress mannequins. |
| 280.358 | Distributor and Dealer. (Salesman, Motor Vehicles and Supplies). Sells motor vehicles and supplies, utilizing knowledge of sales promotion techniques to advise dealer. Reviews sales records to determine number of cars to order. |
| 250.258 | Insurance Agent. (Salesman, Insurance). Contacts prospective clients to persuade them to purchase policy. Explains policy. Calculates rates for each policy. May collect premiums from policyholders and keep record of payments. |
| 250.358 | Real Estate Worker. (Salesman, Real Estate). Rents, buys, and sells property for clients on commission basis. Studies property listings, reviews trade journal. Accompanies prospects to property sites. Draws up real estate contracts. |
| (No Number given) | Salesman. Sells merchandise to establishments or individuals. Displays and demonstrates merchandise. Quotes price and credit terms. Prepares forms and sales contract. |

## F. CLERICAL OCCUPATIONS

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| 160.188 | Accountant. Designs new or modifies existing accounting system to provide record of assets, liabilities, and financial transactions of establishment. Supervises bookkeeping. Audits contracts, orders, and vouchers, and prepares reports to substantiate individual transactions. Prepares and files tax returns and other government reports. |
| 210.388 | Bookkeeper. Verifies and enters details of transactions as they occur or in chronological order in account and cash journals from invoices, sales slips, etc. Balances books and compiles reports to show statistics. Calculates employee wages. May prepare withholding, Social Security, and other tax reports. May operate bookkeeping machine. |
| 211.468 | Cashier. Receives cash from customers in payment for goods or services. Computes bill with adding machine or cash register. Makes change, cashes checks, issues receipts. Verifies cash register total against cash on hand. May give cash refunds. |

### CLERK

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| 219.488 | Accounting Clerk. Performs routine calculating, posting, and typing duties to accomplish accounting. Totals accounts; computes and records interest. May type vouchers, invoices, statements, etc. |

219.388 Administrative Clerk. Compiles records and reports. Computes taxes, wages, premiums, commissions and payments. Deals with customers, claimants, and employees. Prepares and sends out receipts, bills, policies, invoices, and checks. Operates office machines. Opens and routes mail and answers correspondence. Takes dictation, keeps books, prepares payroll, purchases supplies.

206.388 File Clerk. Files correspondence, cards, invoices, receipts systematically. Locates and removes material from files when requested. Traces missing file material. May enter data on records. Keeps files up to date.

209.388 General Clerk. Writes or types bills, statements, checks, or other documents. Proofreads. Sorts and files records. Addresses envelopes and packages and stuffs. Answers phone, conveys messages, and runs errands. Operates office machines. Gets supplies. Distributes mail.

223.388 Inventory Clerk. Compiles records of amount, kind, and value of merchandise. Counts stock and posts totals to inventory records. Computes figures from sales, production, and purchase records to get current theoretical inventory. Investigates and adjusts discrepancies. Prepares inventory reports.

215.488 Payroll and/or Timekeeping Clerk. Computes wages and records on payroll records. May tally time sheets or work tickets. Operates posting machine to compute deductions. May prepare annual reports on earnings and income tax deductions. May keep records of sick leave. May prepare and distribute pay envelopes.

205.268 Personnel Clerk. Compiles personnel records. Records data for each employee, such as address, weekly earnings, absences. Types reports from employment records. May administer and score aptitude and personality tests. May prepare accident and injury reports.

221.388 Production Clerk. Compiles production records from work tickets. Estimates production rate of department. Integrates specifications of customer orders with production estimates to determine production schedule. Informs customer and department supervisor of proposed shipping data. May prepare production reports.

222.387 Shipping and Receiving Clerk. Receives incoming and prepares outgoing shipments and keeps records. Determines method of shipment. Compares quantity and identification numbers on merchandise against orders. Assembles containers. Affixes shipping instructions. Prepares bills of lading. Posts weights and shipping charges.

223.387 Stock Clerk. Receives, stores, and issues equipment, supplies, and merchandise and compiles stock records. Inspects incoming stock and verifies against requisitions. Prepares inventory. May mark identifying codes on articles. May determine method of storage.

240.388 Collector and Adjuster. (Collection Clerk). Removes delinquent accounts from tile. Mails form letter to customer. Calls customer on telephone. Prepares statements for credit department. May order repossession or service disconnection. May receive payments and post amount paid. May grant credit extension.

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| 132.088 | Copywriter. Consults with account executive for information on product or service and to discuss style and length of advertising copy. Writes original copy for newspapers, magazines, billboards, and transportation advertising. Writes scripts for radio and TV advertising. |
| 213.382 | Data Processor. See Computer Operator. |

## OPERATOR

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| 213.382 | Computer Operator. Sets control switches on computer. Selects and loads input and output units. Starts operation. Observes machine for error lights, verification printouts and error messages, and machine stoppage or faulty output. Types alternate commands into console to correct error or failure. Clears unit after run. Records operating time. Wires control panels. |
| 213.582 | Key Punch Operator. Attaches prepunched program card to drum. Loads machine with punchcards. Transcribes data from source material into perforations on card. Verifies registration of cards. Observes machine for malfunctioning. Removes jammed cards. |
| (No Number given) | Office Machine Operator. Listed in D.O.T. by type of machine. |
| 213.382 | Peripheral EDP Equipment Operator. (Computer Peripheral Equipment Operator). Mounts and positions materials. Sets guides, keys, and switches. Selects wired control panels and inserts into machine. Presses switch to start operation. Observes materials for creases, tears, or printing defects and watches machine for error lights. Removes faulty material and notifies supervisor of machine stoppage or error. Unloads and labels materials. Stores them or routes them to library. Separates and sorts printouts. |
| 235.862 | Switchboard Operator. Operates cord or cordless switchboard to relay incoming, outgoing, and interoffice calls. (Pushes switch keys or plugs cord into jacks.) May supply information to callers and record messages. May keep record of calls placed and toll charges. May perform clerical duties. |
| 203.588 | Teletype Operator. Types identifying code and outgoing message when stations are connected. Reads incoming message to detect errors and types request for clarification. Pastes messages received on tape onto paper forms. Enters date, time, and serial number on messages sent and received. |
| 215.488 | Payroll Statistician. See Payroll Clerk. |
| 209.688 | Proofreader. Reads typescript on proof of type setup to detect and mark for correction grammatical, typographical, or compositional errors. |

237.368 Receptionist. Receives clients or customers coming into establishment, ascertains their wants, and directs them accordingly. May make appointments and answer inquiries. May perform clerical duties.

## SECRETARY

169.168 Executive Secretary. (Administrative Secretary). Keeps official records. Prepares memos explaining administrative procedures and policies. Plans conferences. Directs preparation of records and filing of documents.

201.368 General Secretary. Schedules appointments, gives information to callers, takes dictation, routes mail, files, composes and types routine correspondence. May compile and type statistical reports.

201.368 Legal Secretary. Prepares legal papers and correspondence of legal nature, such as sommonses, complaints, motions, and subpenas.

201.368 Medical Secretary. Prepares medical charts and reports for doctor or hospital personnel, utilizing knowledge of medical terminology. May prepare and send bills to patients and records appointments.

223.387 Spare Parts Analyst. See Parts Clerk.

202.388 Stenographer. Takes dictation in shorthand and transcribes material on typewriter. Performs variety of clerical dutes, unless in stenographic pool.

212.368 Teller. Receives checks and cash for deposit and enters amount in passbook or issues receipts. Cashes checks and pays out money upon verification of signatures and customer balances. Orders supply of cash to meet daily needs, counts incoming cash, and prepares cash for shipment.

919.368 Ticket Agent. Sells tickets for transportation agencies. Plans route and computes cost. Insures that space is available. Answers inquiries. Checks luggage and directs passenger boarding area. May locate workers on job to verify attendance of workers listed on daily spot sheet.

219.388 Timekeeper and Dispatcher. Keeps daily record of arrival and departure time of employees. Computes total work time and sends to payroll clerk. May prepare payroll. May pay employees. May locate workers on job to verify attendance of workers listed on daily spot sheet.

## G. PRODUCTION (PLANT) OCCUPATIONS

905.883 Driver. (Truck Driver). Drives truck to transport materials, merchandise, equipment, or men. Loads and unloads trucks by hand or with mechanical device.

## MANAGEMENT OCCUPATIONS

Foreman, Non-Working. See Foreman, under Service Occupations.

012.188 Production Planner. Draws up master schedule to establish sequence and lead time of each operation. Plans and schedules workflow for each department according to master schedule. Confers with department heads. Prepares reports. Expedites operations that delay schedule.

### PLANT WORKER

599.886 Assistant Mill Operator. Feeds raw material to mill by conveyor belt. Breaks lumps to facilitate passage. Opens hatch and drains slurry. Places slurry in drying ovens. Dumps dried slurry into drums and moves drums to storage area. Cleans mill.

(No Number given) Bench Hand. Assembles, lines up and spotwelds vacuum tube parts. Wires circuits. Solders. Operates grid winding machine. Cleans and processes glass and metal parts. Inspects finished work.

582.885 Bleach Range Operator. Positions truck of folded cloth at feed end of machine. Sews cloth end to lead cloth in range. Sets width guide. Controls level of chemicals, pressure on rollers, and speed of range. Stops range and seams cloth to correct flaws.

690.885 Buffer. (Tire Buffer). Positions tire on machine and inflates. Rotates tire and pushes lever to move tire against abrasive wheel that cuts tread from tire. Turns dial to buff wheel against tire. Measures tire for size of retreading mold.

Dockman. See Material Handler.

Factory Helper. No listing available.

Furniture Factory Worker. No listing available.

920.887 Furniture Packer. (Packager, Hand). Lines and pads crates. Assembles cartons. Wraps protective material around product and packs into containers. Closes, seals, and tags containers. Inspects materials, products, and containers at each stage of packaging process. Records weight, time, and date of filled containers.

609.684 Inspector. Inspects materials and products for conformance to specifications. Examines product for surface defect. Compares with sample model to insure completion assembly. Separates rejected parts and marks type of defect. May test products for structural flaws.

862.884 Laborer, Construction. Erects barricades and places lanterns around worksite. Breaks up pavement, digs ditches. Helps lower and maneuver heavy pipes. Mixes and lays concrete. May drive truck.

407.887 *Laborer, Landscape*. Digs holes and trenches. Plants and waters sod and shrubbery. Mixes and pours cement for garden borders. Mows lawn. Places stone and plants flowers in gardens. Hauls topsoil in wheelbarrow and spreads it.

*Machine Operator*. Listed in D.O.T. by type of machine.

929.887 *Material Handler*. Reads work order to ascertain materials to be moved. Opens containers; counts and weighs materials. Loads and unloads materials onto or from conveyors, racks, etc. Loads materials into vehicles and installs bracing or padding. Conveys materials from storage to designated area by dolly, elevator, wheelbarrow, etc. Records number of units handled on daily production sheet. Attaches identifying tags, labels, or marks on materials.

910.138 *Railroad Year Conductor*. Supervises switch-engine crew. Receives switching orders and relays to Yard Engineer. Notifies Yard Engineer to haul cars to specified sections of year. Gives instructions to switch tender to throw switch tracks and to brakeman to couple and uncouple cars. Keeps records of cars switched.

# SECTION TWO

## A MODEL
## FOR
## A PLAN PREPARED AT THE LOCAL LEVEL

# Forsyth Technical Institute's Long-range Plan
(A Suggested Model Plan)

## A MODEL

## FOR

## A PLAN PREPARED AT THE LOCAL LEVEL

This Model Long-range Plan has been prepared for the five year period June, 1972, to June, 1977.

> The model long-range plan is based on manpower information collected at the local level. It is further based on the output of the institution and is designed to assist in meeting the skilled manpower needs of the community that is served by the institution.

The sole objective of the plan is to provide factual guidance for program offerings that will best serve the needs of each student who comes to Forsyth Technical Institute. The programs should equip each student with the training and/or education he or she needs to get a good job or to get a better job than the one in which he might be working.

# CHAPTER I

# INTRODUCTION

## Philosophy of This Planning Concept

Three major obstacles appear to have hindered the long-range planning efrorts for education and to have produced confusion and a lack of interest among the administrative and instructor staffs in the institutions--the place where long-range planning is needed. This confusion and the resulting lack of planning have resulted in curriculum and course offerings that often are based on "judgment estimates" rather than on the best possible factual information on the manpower needs of the community served by the institution.

The first obstacle to long-range planning has been the planning expert who is inclined to discuss planning in general terms and to complicate the entire process by advocating numerous types of plans. Each plan has some kind of name and many different kinds of planning are stressed, such as policy planning, goals planning, objectives planning, curriculum planning, operations planning, personnel planning, and fiscal planning. It would seem that advocates of the resulting complicated planning concepts have created enough confusion and complications to turn institutions away from the planning effort. The concept for this model plan purposely has been kept simple and it is designed to assist institutions in the preparation of usable long-range plans that will give them an accurate estimate of future educational needs. These estimates are necessary for the decisions they should be making to serve properly the student and the community.

These decisions can be translated into the institutions' objectives which will guide their efforts and which can be used by them to measure their accomplishments.

The second obstacle is the historical and continuing insistence of the world of education on utilizing the input to an institution, its enrollment, as the primary basis for making decisions and for calculating costs. Such costs are relatively easy to calculate and the underlying notion seems to be that "cost" is a good indicator of benefits. However, input (enrollment) information alone does not tell anything about the outcomes and benefits attained by the implementation of a particular decision. The utilization of input information does not tell us if we are providing the student with the education and training required to find a meaningful place in the community. Is the student being trained in a field that already is over-crowded? Is the student learning skills that no longer have a use in the economy? Is the institution producing a numerical output that will assist in reducing identified shortages in the job market or is the institution over-producing some types of skills? The concept for this model plan is based on the output of the institution which in turn is based on information that tells the student and the institution what the jobs are and in what numbers. After the output is determined, the input or enrollment can be reckoned from the institution's historical data on the number of students that must start (be enrolled in) a curriculum to provide the desired output.

The third obstacle has been the non-availability of useful local-level manpower information that can be used by the institutions for long-range planning. Manpower information is available from a number of sources with the U.S. Census Bureau, the U.S. Labor Department, and the N.C. Employment

Security Commission considered to be the most reliable. However, the manpower information from these sources necessarily is available only for the national and state levels. The Employment Security Commission now has been able to provide manpower projections for the seventeen multi-county planning regions. This effort has been a major achievement, but it still is too broad a base for use by institutions in their local long-range planning.

A statewide long-range plan, "Planning for the North Carolina Community College System," has been prepared by the Department of Community Colleges. This plan is based on Census Bureau manpower information and is an excellent source of manpower data. The statewide plan was used to prepare a model plan for Forsyth Technical Institute but, again, the available information on manpower needs was on a statewide basis. Although job needs were developed, the plan could not indicate where the jobs existed. The jobs were available for the trained student somewhere in the state, but did the jobs exist in the East, West, or in the Piedmont? More precise manpower information is needed by the institutions.

The Model Information System (Section I of this publication) was developed, as a research project, in order to provide institutions with an instrument which they can use to conduct surveys and to obtain their own manpower information at the local level. It has been tested by being used to secure the manpower needs of a local community to provide the information base for this model institution long-range plan.

## Planning Concept

The model plan is composed of four sections which are listed by titles in this paragraph. Each section will be explained briefly in later paragraphs. The sections are

Purpose or Mission Statement

Goals

Manpower Needs of the Community

Objectives to Meet the Manpower Needs

This planning concept has been designed to provide an institution with the factual assistance it needs to reorient its thinking toward emphasis on outcomes. Outcome-oriented planning, at the institution level, simply means utilizing output, results, and benefits as the primary basis for determining the direction the institution should follow. It means choosing a destination and then determining the best way to get there.

The various sections of the plan are discussed briefly in the following paragraphs to indicate their functions in this long-range planning model. It again is emphasized that this planning concept is based on the output of the institution and it is designed to serve the needs of the student and the local community. The output of the institution is recognized as both graduates and ELMS ("Early Leavers with Marketable Skills" are students who leave an institution before graduating and with a marketable but lesser skill than the graduate).

## Purpose or Mission Statement

The purpose or mission statement is suggested as a one-paragraph statement, derived from legislation and policies, which describes in broad terms what the education and training programs of the institution should accomplish in meeting the needs of the students and the community served by the institution.

## Goals

Goals are also sometimes called long-range objectives or continuing objectives. The goals are long-range and they are directed toward the eventual fulfillment of the stated purpose of the institution. Each goal describes a general activity that will be pursued over a long period of time. Stated goals are not quantifiable, and it may require a decade, a generation, or generations for their accomplishment. The goals guide the efforts of the institution over a long period of time. The goals of the Community College System have been published, but the goals of an institution do not necessarily have to be as comprehensive as those for the whole system. The institution should try to relate its goals to the system's goals, but it is not mandatory that each of its goals relate to one of the system's goals. The institution's goals must be selected with care and directed toward the provision of assistance to the student, the community served by the institution, and the people of that community.

## Manpower Needs of the Community

Manpower needs of the community served by the institution are determined by making the surveys described in Section One of this manual and by analyzing the results of these surveys. The three survey systems described and illustrated in Section One provide information on high school seniors' aspirations, on the follow-up of students who have left the institution, on the trends in the local economy to include the numbers and kinds of future jobs that must be filled during the next five years. This information on the needs of the local community, obtained at the local level, provides the information base required for the preparation of a long-range plan for an institution.

## Objectives to Meet the Manpower Needs

Objectives to carry out the goals and to meet the manpower needs of the community served by the institution should be stated for specific, shorter time frames, and they should be quantifiable. Objectives, primarily, are specified as the number of graduates and ELMS required to meet the manpower needs of the local community and to serve the students. The number of graduates and ELMS, stated as the output of the institution's various educational programs, should include the time frame in which they should be joining the local economy as producing employees. The stated objectives also should be directed toward the eventual fulfillment of the institution's goals.

This model long-range plan does not include a provision for the institution's "ELMS," although they have been taken into consideration in the planning process. The fact is that the institution in this case, because of the large number of projected job openings, cannot and should not expect to provide sufficient graduates for all openings within the forseeable future. Therefore, it is expected that there will be sufficient openings available in the skills surveyed for all anticipated "ELMS."

In planning objectives to meet the manpower needs, it is important that the planner realize the necessity of alternatives to stated objectives. Efforts to reach a planned objective may yield any of three possible results: (1) accomplishment of the established objective, with predicted outcomes, (2) exceeding of the established objective, or (3) partial accomplishment of the established objective. A proper plan will have defined alternatives, with predicted outcomes, in the event that either the over-accomplishment or partial accomplishment, as described above, is realized. It is important, then, that the planning process be an ongoing, continuous one, with periodic review and re-adjustment of objectives.

## Summary

The model long-range plan is simple and concerns itself with only a few fundamental facts that will provide improved guidance for curriculum offerings and curriculum content. Sophisticated planning can be injected into the planning process at a later date after long-range planning and the results of such planning have been accepted and are being utilized by the institutions. This basic system uses the information gathered through implementation of the survey systems described in section one of this manual. Initial guidance on the manpower needs of the community served by an institution can be determined by visual inspection of the survey results. The planning process is an extension of the visual inspection and provides a means for a more thorough analysis of the manpower information plus a record of the analysis that can be used for implementation of curriculum changes and for wide distribution to all concerned parties.

The plan is based on manpower information and is intended to assist in the elimination of any institutional rigidity that might creep into the system. Such rigidity sometimes occurs as a result of retaining outdated curriculums because of their expensive equipment or because of outdated instructors who are reluctant to retrain and change or just because of a lack of factual information on manpower trends. Also, there are some who will state that planning based on manpower information fails to place men or women foremost above machines and industry. They advance the hope that educated citizens will give direction to society. However, the planning concept accepts the fact that information on future job openings is the best guide available to tell the individual the direction his education should take if he is to earn a good living. If he does not have such a desire or need, the planning concept does not hinder his chosen educational path. The plan identifies future manpower needs of the community that an institution should help fill. The plan provides factual information for curriculum offerings and content, but the educational process and the curriculum content remain with the educator and must be solved by him and not by the manpower plan.

# CHAPTER II

## AN OVERVIEW OF THE ECONOMY OF THE COMMUNITY

The three-county area of Davie, Forsyth, and Stokes was surveyed to obtain employment information that can be used in the preparation of a suggested model long-range plan for Forsyth Technical Institute. This area provides a diverse economy ranging from rural and largely agricultural areas in Davie and Stokes and parts of Forsyth counties to a heavily industrialized area in and around Winston-Salem in Forsyth county.

In 1971, the employed work force in this area numbered approximately 115,000. A comparison between agricultural occupations and manufacturing occupations indicated that, in this three-county area, less than 3% of the work force was engaged in agricultural occupations while approximately one-third of the work force was employed by the manufacturing industries. This large manufacturing work force indicates the importance of the Winston-Salem manufacturing industries to the people of the surrounding area.

The greater portion of the manufacturing employment in the Winston-Salem area is found in the three major industries producing tobacco products, textiles, and electrical machinery. The principal employment in these three broad industrial categories is for the production-line worker. These jobs, in most cases, are filled by people who are "hired off the street," given in-house training on production line machines, and then put to work in a production-line effort. Jobs of this type do not require the education and training provided by curriculum programs. However, extension courses should be made available, as required, to upgrade or retrain such employees.

All industries do require certain other types of skills that are available through curriculum programs offered by educational institutions. Examples of these jobs are supervisors or middle management, sales, maintenance, and clerical personnel (including all types of accounting skills). Needs for electrical and engineering technicians also were identified but in smaller numbers. The survey system was designed to determine the needs in the economy for the types of skills that should and can be obtained from programs offered by the local institution and it does not provide information on the needs for the "production line" worker.

Despite the importance of industry in this three-county area, more than one-half the work force in the area is engaged in non-manufacturing occupations other than agriculture. The most numerous non-manufacturing occupations were found in services (including health and food services), government, transportation and communications, and construction. Other non-manufacturing fields employing substantial numbers of persons in the three-county area are finance, insurance, and real estate.

The total number of persons (in excess of 60,000) engaged in non-manufacturing industry in this three-county area provides vital information for the occupational education planners at both the high school and post-high school institution levels. In most of the manufacturing firms the majority of the work force is engaged in minimum-skill tasks, often of a repetitive nature, requiring only a short period of on-the-job training. A large percentage of those employed in the non-manufacturing or service occupations, on the other hand, such as wholesale trade and sales, construction, governmental services, communications and related fields, are in positions in which qualifying skills are a requirement for entry-level positions. The salaries for such jobs are often determined by a background of training and education directly related to the job (an example is wholesale sales occupations for which a business-related course of study is indicated and in which salary, many times in the form of commissions, directly relates to skill levels). Many of the service occupations, such as practical nursing, require a prescribed course of study and licensing and/or certification as prerequisites for entrance. Large numbers of the jobs in the non-manufacturing industries require vocational rather than technical training. The non-manufacturing industries also require large numbers of management, sales, clerical and maintenance personnel.

The construction industry (an example of a non-manufacturing industry) has experienced enormous growth in the immediate vicinity of Winston-Salem during the last decade. It has shown acute employee shortages in the occupations of carpenters, brickmasons, plumbers, welders, electricians, heating and air conditioning mechanics, and sheet metal workers. The trucking firms are another example of the large employers in the non-manufacturing industries and Winston-Salem is one of the major trucking centers in the Southeast. Again the major demand is for maintenance personnel, drivers, warehousemen, and dispatchers. The non-manufacturing or service industries also require electrical and engineering technicians but jobs for this type of worker are not as numerous at this time as are the jobs for people with skills derived from two-year business and one-year vocational curriculums.

The publication Planning for the North Carolina Community College System, Ten Year Strategic Plan 1970-80[1] indicates that during this decade there will be a 35% greater need for graduates from the two-year technical programs over those graduating from the one-year vocational programs. This forecast is for the whole state, but it is borne out by the survey because of the large numbers of jobs forecast for individuals who have been in the two-year technical business curriculums. The need for salesmen (wholesale or traveling), for mid-management people, for accountants and bookkeepers, and for various secretarial skills is great. However, the need for technicians such as architectural, electrical and electronic engineering, fire and police science, horticulture, and certain health areas is limited. The need for larger numbers of people who have been in these latter curriculum programs may increase significantly during the latter part of the decade. Continuing surveys of business and industry will indicate if and when this change takes place.

This overview of the economy of this three-county area is presented as a foreword to the actual suggested model long-range plan for Forsyth Technical Institute. The survey has indicated that the primary non-production line job openings are for individuals who have attended the two-year business programs and the one-year vocational education programs. Jobs are identified for participants in the other technical programs but in much smaller numbers. The skill needs in the technical programs should be offered, and when, during the five-year period 1972-77. It would appear that a large increase in manufacturing industries, other than those now in the target area like tobacco and textiles, will be required before there will be significant job openings for the skills obtained from technical programs such as electrical and electronic engineering.

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[1] Planning for the North Carolina Community College System, Vol. II. Raleigh, N.C.: North Carolina Department of Community Colleges. 1970.

# CHAPTER III

# A LONG-RANGE PLAN FOR FORSYTH TECHNICAL INSTITUTE

## Purpose

The purpose of Forsyth Technical Institute is to serve the people of the community in which it is located by preparing them for gainful employment and effective community membership through the total development of the individual. In carrying out this role the institution offers occupational and cultural training opportunities from basic education through the two-year technical level to anyone of suitable age who can learn and whose needs can be met by the institution.

## Goals

The following goals have been established by Forsyth Technical Institute for the ultimate fulfillment of the stated purpose of the institution:

a. To provide preparatory educational experiences for people of suitable age who have not achieved the foundations applicable to post-high school level occupational programs by guiding students into those types of experiences that will develop self-concepts, raise academic achievements, and erase educational deficiencies.

b. To prepare people for gainful employment by offering a variety of occupational training programs, of varying degrees of sophistication, that are in keeping with local, state, and national employment opportunities and trends.

c. To eliminate educational deficiencies, by bringing every adult in the community to a minimum of twelve years of educational achievement and to assist individuals in developing social competence, in achieving self-fulfillment, and in continuing their preparation for the future.

d. To provide activities and learning opportunities which meet the adult educational and community service needs of the residents of the institution's community.

## Manpower Needs of the Community

The manpower needs of the community served by the institution have been determined for the five-year period of June, 1972, to June, 1977. The manpower needs were obtained by utilizing the survey system for business and industry that is described in Section One of this manual. The detailed results of the survey are contained in Chapters II, III, and IV of Section One. A summary of the manpower needs is contained in Appendix AA of this section. The survey has indicated that during this period there will be job openings for graduates and ELMS from the one-year vocational programs and the two-year business programs than from the other technical programs. It is believed that this situation arises from the fact that the industry in this area primarily consists of tobacco, textiles, and electrical machinery. The employees in these industries are predominately production-line workers who do not require the education and skill training provided by a technical institute.

Appendix BB of this section provides a consolidated listing of job openings expected during the period of June, 1972, to June, 1977. It also indicates the curriculums that should provide the skills needed for employment in the various occupations. There are a number of instances where the institution does not offer curriculums that will provide skills for some of the job openings. An analysis of the job openings and the curriculums offered by the institution plus the curriculums that might be offered are:

### T-041 Architectural Technology

Seventeen job openings or three to four jobs per year have been identified. It is recommended that this curriculum be considered for termination if the next business and industry survey does not identify additional jobs.

### T-059 Associate Degree Nursing (Registered Nursing)

Two hundred and fourteen job openings or 43 to 45 jobs per year have been identified. It is recommended that the enrollment in this curriculum be adjusted to provide a maximum output of 45 graduates per year.

### T-018 Business Administration

The job openings for both graduates and ELMS are much greater than the institution could possibly meet. It is suggested that consideration be given to providing sufficient flexibility in the curriculum to allow students enough specialization to prepare them for jobs with large numbers of job openings. Suggested areas of specialization are the cluster of managers and supervisors with 1300 job openings, salesmen with 1800 job openings and various accounting and clerical occupations with 1200 job openings.

### T-073 Early Childhood Specialist

No job openings have been identified for students from this program. The curriculum presently is being offered as courses to individuals already employed in child care centers. It is recommended that this curriculum be considered for early termination.

## T-022 Electronic Data Processing - Business

Thirty-eight job openings or eight jobs per year have been identified. Fifty-six jobs were identified for computer operators and 19 jobs for peripheral EDP equipment operators. It is suggested that students in this program might be given enough training to qualify for employment in these occupations as entry level jobs prior to employment as programmers. It is recommended that the enrollment in this curriculum be adjusted to provide a maximum of eight to ten graduates per year.

## T-045 Electronics Engineering Technology

Forty-eight job openings or ten jobs per year have been identified. It is recommended that the enrollment in this curriculum be adjusted to provide for a maximum output of nine to ten graduates per year.

## T-063 Fire Science

Thirty-six job openings or seven to eight jobs per year have been identified. It is suggested that the number of identified jobs is too small to justify this curriculum. It is not being offered as a curriculum at the present time but courses are offered to employed firemen. It is recommended that the courses be offered as an extension program or that the present method of offering curriculum courses be continued.

## T-033 General Office Technology

Four hundred and thirty-seven job openings or 87 to 88 jobs per year have been identified. It is recommended that the enrollment in this new curriculum be adjusted to provide a maximum of 30 to 40 graduates per year until sufficient experience has been gained to determine the number of ELMS that also will be provided for these job openings.

## T-091 Inhalation Therapy Technician

Ninety-three job openings or 18 to 19 jobs per year have been identified. It is recommended that the enrollment in this curriculum be adjusted to provide a maximum output of 18 to 20 graduates per year.

## T-050 Manufacturing Engineering Technology

Graduates of this program have been employed as mechanical engineering technicians and 15 job openings or three jobs per year have been identified for this occupation. It is recommended that this curriculum be considered for termination if next year's student follow-up survey does not indicate that students are finding employment in the general area for which they have been trained.

## T-043 Mechanical Drafting and Design Technology

No job openings have been identified for students from this program. Graduates and ELMS have reported various jobs ranging from distributor and dealer to radio and TV repairman. It is recommended that this curriculum be considered for termination or for consolidation with other drafting curriculums. It is suggested that students should have enough training in mechanical drafting to obtain entry level jobs as draftsmen.

## T-104 Nuclear Medicine Technology

No job openings have been identified for students from this program. The first graduates (summer of 1972) have found jobs but not in the local community. Students should be informed that the majority of the graduates probably must leave the community to find employment. It is recommended that this curriculum be considered for termination if the next graduating class must leave the area to find jobs and if graduates continue to compete with students in the Radiologic Technology curriculum for jobs.

T-009 Ornamental Horticulture Technology

Forty-two job openings or eight to nine jobs per year have been identified. The output from this curriculum was 12 graduates and 14 ELMS for school year 1971-72, and not many students appear to be taking or finding jobs in the area for which they have been educated. It is recommended that the enrollment in this curriculum be adjusted to provide a maximum output of six to eight graduates per year and that the program be considered for termination after the school year 1976-77.

T-064 Police Science

Thirty-four job openings or six to seven jobs per year have been identified. It is suggested that the number of identified jobs is too small to justify this curriculum. It is not being offered as a curriculum at the present time, but courses are offered to employed police officers. It is recommended that the courses be offered as an extension program or that the present method of offering curriculum courses be continued.

T-061 Radiologic Technology

Seven job openings or two jobs per year have been identified. It is recommended that the student follow-up survey for this program be used to determine the need to continue or to terminate this curriculum.

T-030 Secretarial - Executive

The jobs for both graduates and ELMS are much greater in number than the institution could possibly meet. It is recommended that enrollment in this curriculum be increased as rapidly as possible until it is providing an annual output of 100 graduates.

### V-024 Air Conditioning and Refrigeration

Two hundred and sixty-one job openings or 52 to 53 jobs per year have been identified. It is recommended that the enrollment and facilities for this curriculum be adjusted to provide a maximum output of 40 to 45 graduates per year by school year 1976-77.

### V-001 Automotive Body Repair

Forty-six job openings or nine to ten jobs per year have been identified. The school year 1971-72 provided 18 graduates and 16 ELMS. It is suggested that this curriculum should be continued and that it should be examined carefully after the results of the next survey of business and industry become available. It is recommended that the enrollment be adjusted to provide a maximum output of eight to ten graduates per year.

### V-003 Automotive Mechanics

Three hundred and eleven job openings or 60 to 62 jobs per year have been identified. These job openings include 17 Motor Vehicle Service and Repair Appraisers and 67 Transmission Specialists. It is suggested that consideration be given to the provision of specialization in these areas for interested students. The school year 1971-72 provided an output of 21 graduates and 24 ELMS. It is recommended that the enrollment and facilities for this curriculum be adjusted to increase the output to 30 graduates per year by school year 1976-77.

### V-007 Carpentry and Cabinetmaking

Nine hundred and sixty-four job openings or 192-194 jobs per year have been identified. It is recommended that the enrollment and facilities for this curriculum be adjusted to increase the output to a minimum of 30 graduates per year by school year 1974-75.

### V-009 Cosmetology (Contract)

One hundred and sixty-six job openings or 30 to 35 jobs per year have been identified. This curriculum is not offered, but it is suggested that there are enough job openings to justify the curriculum if the institutions elects to offer it under the provisions involved in the contract type of curriculum.

### V-013 Diesel Vehicle Maintenance

One hundred and thirteen job openings or 22 to 24 jobs per year have been identified. The school year 1971-72 provided an output of 15 graduates and 19 ELMS or a total output of 34. It is recommended that the enrollment be adjusted to continue an annual output of 15 graduates.

### V-015 Drafting - Building Trades

Thirty-one job openings or six to seven jobs per year have been identified. The school year of 1971-72 provided 18 graduates and three ELMS. It is suggested that consideration might be given to the consolidation of drafting curriculums with necessary specialization but with enough training to obtain an entry level job as a draftsman. It is recommended that the enrollment of this curriculum be adjusted to provide a maximum output of eight to ten graduates per year.

## V-017 Drafting - Mechanical

Fifty-eight job openings or 11 to 12 jobs per year have been identified. The school year of 1971-72 provided 14 graduates and 10 ELMS or a total output of 24. It is suggested that consideration might be given to the consolidation of drafting curriculums with due recognition given to the fact that draftsman skills are needed for the majority of entry level jobs. It is recommended that the enrollment be adjusted to provide a maximum output of 10 to 12 graduates per year.

## V-018 Electrical Installation and Maintenance

One hundred and seventy-nine job openings or 35 to 36 jobs per year have been identified. It is recommended that the enrollment and facilities for this program be adjusted to provide for an output of 20 to 25 graduates per year.

## V-022 Graphic Arts - Printing

One hundred and twenty-four job openings or 25 jobs per year have been identified. The job openings are divided among a number of occupations ranging from compositor to film technician as indicated in Appendix AA. It is recommended that the enrollment for this program be adjusted to provide for an output of 15 to 20 graduates per year.

## V-032 Machinist

One hundred and thirty-one job openings or 25 to 27 jobs per year have been identified. It is recommended that the enrollment and facilities for this program be adjusted to provide an output of 15 to 20 graduates per year.

### V-070 Masonry

One hundred and forty-three job openings or 28 to 30 jobs per year have been identified. This curriculum has been approved, but the institution does not offer it. It is recommended that the curriculum be offered and that the enrollment and facilities be adjusted to provide for an output of 20 to 25 graduates per year.

### V-037 Plumbing and Pipefitting

Two hundred and forty-three job openings or 48 to 50 jobs per year have been identified. It is recommended that the enrollment and facilities for this program be adjusted to provide for a minimum output of 25 to 30 graduates per year.

### V-038 Practical Nursing

Two hundred and nine job openings or 40 to 45 jobs per year have been identified. The school year 1971-72 provided 66 graduates and 24 ELMS. The majority of the graduates have been employed in practical nursing jobs. The estimates of jobs per year are based on straight line projection; therefore, the 1971-72 output has reduced the total number of identified jobs by more than the estimated 40 to 45 job openings per year. Statewide estimates as well as this local information indicate the possibility of a greater output of licensed practical nurses than there will be jobs available. It is recommended that the enrollment for this program be adjusted to provide for a maximum output of 40 to 45 graduates per year.

### V-042 Radio and Television Servicing

Sixteen job openings or three to four jobs per year have been identified. It should be noted that the latest estimates by the Employment Security Commission indicate 1,655 job openings for the entire state during the 1970-80 decade or 165 to 170 job openings per year for the entire state. There are 30 institutions offering this curriculum and they should not average more than five to six graduates each per year to avoid overproduction, assuming that the institutions are the only source of output for this skill. It is recommended that consideration be given to early termination of this curriculum. It also is suggested that extension courses be offered to update employed radio and television repairmen.

V-050 Welding

Two hundred and one job openings or 40 jobs per year have been identified. It is recommended that the enrollment and facilities for this curriculum be adjusted to provide for an output of 25 to 30 graduates per year.

A number of other occupations have indicated substantial numbers of job openings during the 1972-77 period. These occupations are included in Appendix BB, and the major ones are indicated below with suggestions and comments when curriculums or other programs might be offered by the institution.

Nursing Assistant identifies 131 job openings or 25 to 26 jobs per year. It is suggested that appropriate short courses might be offered to train individuals in the required skills. An enrollment and facilities that would provide for an output of 40 to 50 graduates per year is recommended with an objective of 120 to 150 graduates over a three-year period.

Foreman Non-working, Managers, Superintendents, and Supervisors identify in excess of 1,400 job openings. It would be difficult to train individuals specifically for these jobs. It is suggested that whenever possible training in supervisory development and management might be included in curriculums that would provide jobs for students who could later move into supervisory positions. Appendix AA indicates that even more specialization might be possible in the Business Administration curriculum as preparation for a wide variety of managerial and supervisory jobs.

Maintenance Mechanics identify 167 job openings or 32 to 34 jobs per year. It is suggested that consideration might be given to offering a curriculum such as V-033 Industrial Mechanics. If this or a similar curriculum is offered, it is recommended the enrollment be adjusted to provide an output of 25 to 30 graduates per year.

Sheet Metal Workers identify 329 job openings or 65 to 68 jobs per year. It is recommended that the curriculum V-044 Sheet Metal be offered and that the enrollment and facilities be adjusted to provide an output of 30 to 35 graduates per year.

Civil and Electric Engineering Technicians together identify 42 job openings or eight to nine jobs per year. It is suggested that consideration be given to a combined curriculum or to initiating two curriculums for these skills by school year 1974-75. The final decision might be delayed until the results of the next business and industry survey are available.

Painters and Wallpaperers identify 121 and 107 job openings respectively. It is suggested that appropriate short courses might be offered to train individuals in these skills. It is recommended that if such courses are offered, enrollments should be adjusted to provide for an output of 40 to 50 graduates per year for a period of three years.

### Objectives

Objectives should be established to assist in the eventual fulfillment of the goals of the institution which, in turn, will serve the manpower needs of the community. The established objectives of an institution provide an excellent management tool for the institution as a whole. When objectives are not being met in some areas, the knowledge of this situation becomes available immediately. Studies can be initiated to determine the reasons for not meeting the objectives--are the objectives too high? must the recruiting effort be strengthened? should changes be made in the curriculum, the teaching methods, objectives, etc.? This type of analysis must never be allowed to become a tool for censure, but rather it should be a basis for constructive changes that will improve the program, its participants, and its output.

A suggested method for establishing objectives is to list the output that an institution has determined to be needed to meet the manpower needs of the community it is serving. The manpower needs should be ascertained by surveys of business and industry made at the local level. The following information is provided only as a suggested method for listing objectives--it is furnished for illustrative purposes only.

## OBJECTIVES

### Output - Graduates Per Year

| Curriculums | 1973 | 1974 | 1975 | 1976 | 1977 | Total Output |
|---|---|---|---|---|---|---|
| T-041 Architectural Technology | 10 | 7 | 0 | 0 | 0 | 17 |
| T-059 Associate Degree Nursing | 0 | 45 | 45 | 45 | 45 | 180 |
| T-018 Business Administration | 30 | 40 | 60 | 80 | 100 | 310 |
| T-073 Early Childhood Specialist | 0 | 0 | 25 | 0 | 0 | 25 |
| T-022 Electronic Data Processing | 8 | 8 | 8 | 8 | 8 | 40 |
| T-045 Electronics Engineering Tech. | 8 | 10 | 10 | 10 | 10 | 48 |
| T-063 Fire Science | 0 | 0 | 0 | 0 | 0 | 0 |
| T-033 General Office Technology | 0 | 20 | 30 | 40 | 40 | 130 |
| T-091 Inhalation Therapy Tech. | 5 | 10 | 15 | 20 | 20 | 70 |
| T-050 Manufacturing Eng. Tech. | 10 | 8 | 0 | 0 | 0 | 18 |
| T-043 Mech. Draft. & Design Tech. | 8 | 6 | 0 | 0 | 0 | 14 |
| T-104 Nuclear Medicine Technology | 7 | 7 | 0 | 0 | 0 | 14 |
| T-009 Ornamental Horticulture Tech. | 12 | 8 | 8 | 8 | 8 | 44 |
| T-064 Police Science | 0 | 0 | 0 | 0 | 0 | 0 |
| T-061 Radiologic Technology | 9 | 7 | 6 | 0 | 0 | 22 |
| T-030 Secretarial - Executive | 14 | 20 | 25 | 30 | 30 | 119 |
| V-024 Air Conditioning & Refrig. | 16 | 20 | 25 | 30 | 40 | 131 |
| V-001 Auto Body Repair | 14 | 10 | 8 | 8 | 8 | 48 |
| V-003 Auto Mechanics | 22 | 26 | 30 | 30 | 30 | 138 |
| V-007 Carpentry & Cabinetmaking | 14 | 20 | 30 | 30 | 30 | 124 |
| V-009 Cosmetology | ? | ? | ? | ? | ? | ? |
| V-013 Diesel Vehicle Maintenance | 15 | 15 | 15 | 15 | 15 | 75 |
| V-015 Drafting - Building Trades | 16 | 10 | 8 | 8 | 8 | 50 |
| V-017 Drafting - Mechanical | 12 | 12 | 12 | 12 | 12 | 60 |
| V-018 Elect. Install. & Mainte. | 12 | 18 | 22 | 24 | 24 | 100 |
| V-022 Graphic Arts - Printing | 10 | 15 | 15 | 15 | 15 | 70 |
| V-032 Machinist | 8 | 15 | 15 | 20 | 20 | 78 |
| V-070 Masonry | 0 | 15 | 20 | 25 | 25 | 85 |
| V-037 Plumbing & Pipefitting | 18 | 25 | 25 | 30 | 30 | 128 |
| V-038 Practical Nursing | 66 | 40 | 40 | 40 | 40 | 226 |
| V-042 Radio & TV Servicing | 16 | 8 | 8 | 0 | 0 | 32 |
| V-050 Welding | 16 | 20 | 25 | 30 | 30 | 121 |

The additional curriculums and programs discussed under the "Manpower Needs of the Community" could have objectives established in this same format. It is emphasized again that these objectives are listed only for the purpose of illustrating a format that can be utilized to establish objectives for an institution.

The listed objectives are statements of the annual output or graduates from each program or curriculum. These projected outputs should be translated into the number of students it is necessary to enroll in each curriculum to provide the stated objectives (output or graduates). The enrollments needed for the output from a curriculum can be determined from the past experience of an institution with respect to the number of graduates (output) obtained from past enrollments. Examples of how this can be determined follow:

### T-018 Business Administration, a two-year curriculum

1st year enrollment, Sept. 1969 = 90
Graduates, June 1971 = 26
Enrollment factor = 90 ÷ 26 = 3.46

1st year enrollment, Sept. 1970 = 84
Graduates, June 1972 = 28
Enrollment factor = 84 ÷ 28 = 3.00

Enrollment factor average = 3.23

1974-75 objective = 60 graduates
1st year enrollment, Sept. 1973 = 60 x 3.23 = 194 students

### V-003 Automotive Mechanics, a one-year curriculum

Enrollment, Sept. 1970 = 35
Graduates, June 1971 = 19
Enrollment factor = 35 ÷ 19 = 1.84

Enrollment, Sept. 1971 = 35
Graduates, June 1972 = 21
Enrollment factor = 35 ÷ 21 = 1.67

Enrollment factor average = 1.76

1974-75 objective = 30 graduates
Enrollment, Sept. 1974 = 30 x 1.76 = 53 students

This suggested method for determining enrollments required to meet stated objectives is one system that can be used for this purpose. Enrollment factors will vary for different institutions and different curriculums. The greater the number of years for which statistics are available on enrollments in and graduates from a curriculum, the more valid the enrollment factors will be.

## General

This model planning concept has been restricted to examples of how the following can be determined and placed into a plan:

Statement of the purpose of the institution

Statement of the goals of the institution

Statements of the manpower needs of the community served by the institution

Statements of the objectives that could be established for the institution

An institution that might wish to use this suggested or a similar model for long-range planning will have a management tool that will assist them in determining curriculum offerings that will best serve the people of their community. Institutions could undertake additional long-range planning after they have gained experience in this phase of the planning. The extension of this concept might include the following long-range considerations:

A determination of the future annual requirements for staff and faculty, equipment, and facilities for the curriculums that are to be offered.

A determination of the future annual costs for staff and faculty, equipment, and facilities for the curriculums that are being offered.

Identification of all estimated future financial resources available and a listing of additional funds that will be required.

This suggested planning concept does not examine the growth factor for an institution. Growth must be determined by the institution. A word of caution is offered because the school age population may be stabilizing. The 1970 census indicates a continuing growth in the number of individuals, reaching age 18, through calendar year 1974. A period of stabilization in the number of people reaching age 18 is forecast after calendar year 1974 with a slight decrease in numbers toward the end of the 1970-80 decade. The current decrease in the strength of the armed forces and the policy of not using the Selective Service Act soon may be reflected in drastic decreases in the veteran recruiting potential.

Growth for an institution and the fulfillment of its stated objectives will be dependent on the recruiting effort. Innovation is indicated for the recruiting process to reach all potential sources of future students--high school students, veterans, adults, handicapped, and disadvantaged. The survey systems described in the "Manpower Information Manual" are sources of much greater amounts of information than have been available in the past. It is suggested that this potential data bank of manpower information can be utilized in many new and fresh recruiting programs.

## Extension Programs

This planning model is concerned with manpower needs and the objectives to meet these needs with skills generated from curriculum programs. It is suggested that institutions also might establish objectives for extension educational programs. Extension educational programs objectives can be established by using the information and planning factors established in Volume II of the statewide Planning for the North Carolina Community College System[1] and in the document Planning for Forsyth Technical Institute, Plans for 1970-80 Decade.[2] Suggested methods for computing extension educational programs objectives are contained in the following paragraphs.

### Adult Basic and High School Education Programs

Page 21 and Appendix B of the Forsyth 1970-80 plan and Appendix A, Volume II, of the statewide plan provide information on graduation targets for these programs as follows:

11 through 12 years = 10,100 x 64.6% = 6,524
9 through 10 years = 8,300 x 64.6% = 5,362
0 through 9 years = 16,000 x 52.4% = 8,384

These graduation targets are for the ten-year period. Using a straight line projection which will provide an "order of magnitude" of needs, the following annual objectives are established for the period of June 1972 to June 1977.

11 through 12 years = 652 graduates per year
9 through 10 years = 536 graduates per year
0 through 8 years = 838 graduates per year

It is recognized that an institution would experience difficulties in meeting objectives of this size, but the suggested objectives do indicate the seriousness of the problem. If further is suggested that an institution could calculate graduation targets, as indicated, and then adjust them to the institution's capabilities. Finally, it is suggested that major efforts should be made to increase the output of these programs each year.

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[1] Planning for the North Carolina Community College System, Vol II. Raleigh, N.C.: North Carolina Department of Community Colleges, 1970.

[2] Planning for Forsyth Technical Institute, Plans for 1970-80 Decade. Winston-Salem, N.C.: Forsyth Technical Institute, 1971.

## Occupational Extension Education Programs

Paragraph E of Volume II of the statewide plan[3] provides a formula for projecting occupational extension enrollments. It is suggested that enrollments (rather than graduates/output) calculated in this manner could serve as objectives for the various occupational extension programs. The statewide plan states that "for the past three academic years, occupational extension FTE enrollment has remained at a relatively constant 30% of the total technical and vocational curriculum FTE enrollment." It appears that this percentage will provide adequate projections and, in turn, institution-stated objectives. It is suggested that institutions may wish to check the statewide experience factor against their own statistical information and adjust the 30% if it is indicated.

It is suggested that objectives for the extension programs for General Adult Education and New and Expanding Industry be based on the institution's past experience in these areas.

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[3] North Carolina Department of Community Colleges. op. cit., pages 3-5.

# APPENDIX FOR SECTION TWO

# Appendix AA

This appendix is a consolidation of the results of the survey of high school senior aspirations, of the follow-up survey of students who have left the institution, and of the survey of business and industry. These surveys were made for the Forsyth Technical Institute's community of Davie, Forsyth, and Stokes counties and cover the period from June, 1972, to June, 1977.

## MANPOWER PLANNING REPORT

1971-1972

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
|  |  |  |  | INSTITUTIONAL OUTPUT |  | SENIORS' INTEREST |
| D.O.T. | OCCUPATIONS | 5-YEAR NEED | CURRICULUM INPUT | 1970-71 GRADUATES | 1970-71 "ELMS" |  |
|  | A. SERVICE |  |  |  |  |  |
| 330.371 | Barber | 33 |  |  |  | 2 |
| 332.271 | Beautician & Cosmetician | 166 | V-009 |  |  | 53 |
|  | Counselor |  |  |  |  |  |
| 166.268 | Employment Counselor | 191 |  |  |  |  |
| 166.268 | Personnel Counselor | 8 |  |  |  |  |
| 237.168 | Travel Counselor | 19 |  |  |  |  |
| 012.168 | Fire Service Worker | 36 | T-063 |  |  | 1 |
| 311.878* | Food Service Worker | 597 |  | T-050(1),V-018(1) | V-038(1) | 5 |
| Any Ind. | Foreman, Non-Working | 42 |  |  |  |  |
|  | Law Enforcement |  |  |  |  |  |
| 375.268 | Police Occupations | 34 | T-064 |  | T-018(1) | 35 |
| 372.868 | Security Service Worker | 49 | T-064 | V-042(1) |  | 1 |
|  | Medical Worker |  |  |  |  |  |
| 355.878 | Hospital Attendant | 17 |  |  |  |  |
| 354.878 | Nurse, Practical & PBT | 209 | V-038 | V-038(39) |  | 15 |
| 355.878 | Nursing Assistant | 131 |  |  |  | 2 |

* D.O.T. Number is for waitress, which occurred most frequently in Food Service Worker responses.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
| | | | | INSTITUTIONAL OUTPUT | | |
| D.O.T. | OCCUPATIONS | 5-YEAR NEED | CURRICULUM INPUT | 1970-71 GRADUATES | 1970-71 "ELMS" | SENIORS' INTEREST |
| | B. MAINTENANCE, CONSTRUCTION AND REPAIR | | | | | |
| 861.381 | Brickmason | 143 | V-070 | | | 10 |
| 860.381 | Carpenter | 964 | V-007 | T-001(1),V-007(1),V-003(1) | V-022(1) | 23 |
| 844.884 | Concrete Finisher | 86 | V-070 | | | |
| 824.281 | Electrician | 179 | V-018 | V-018(2),T-045(1) | V-007(3),T-018(1),T-009(1) | 21 |
| | Foreman, Non-Working | 104 | | | | |
| 407.884 | Groundskeeper | 18 | T-009 | | | 1 |
| 863.884 | Insulationist | 5 | V-024 | | | |
| 600.280 | Machinist, Maintenance | 131 | V-032 | V-001(1),V-032(1),V-018(1) | V-018(2) | 9 |
| 899.281 | Maintenance Man, General Utility | 68 | | | | |
| | Mechanic, Except Motor Vehicle | | | | | |
| 637.281 | Heating and Air Conditioning Mechanic | 261 | V-024 | V-024(4) | V-024(1)<br>V-050(2), V-037(1), T-045(1) | 3 |
| 638.281 | Maintenance Mechanic | 167 | | | | |
| 633.281 | Office Machines Mechanic | 36 | | | | |
| 721.281 | Small Motor Mechanic | 43 | | | | 3 |
| | Mechanic, Motor Vehicle | | | | | |
| 299.387 | Appraiser | 17 | V-001,V-003 | | | |
| 602.281 | Automotive Mechanic | 227 | V-003 | V-003(5) | | 28* |
| 807.381 | Auto. Body Repairman | 46 | V-001 | V-001(3) | | 11 |
| 625.281 | Diesel Mechanic | 113 | V-013 | V-013(11),V-024(1) | | 7 |
| 807.287 | Service Writer | 1 | V-001,V-003 | | | |
| 620.281 | Transmission Specialist | 67 | V-003 | | | |

* 193 students indicated "mechanic" as career interest, without specifying type of mechanic.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
|  |  |  |  | INSTITUTIONAL OUTPUT |  |  |
| D.O.T. | OCCUPATIONS | 5-YEAR NEED | CURRICULUM INPUT | 1970-71 GRADUATES | 1970-71 "ELMS" | SENIORS' INTEREST |
| 638.281 | Millwright | 3 |  |  |  |  |
| 806.884 | Mobile Homes & Campers Worker | 94 |  |  |  |  |
| 862.281 | Oil Burner Man | 3 | V-037 |  |  |  |
| 840.884 | Painter | 121 |  |  |  | 2 |
| 862.381 | Plumber and/or Pipefitter | 243 | V-037 | V-037(2) | V-007(1),V-001(1) | 9 |
|  | Repairman |  |  |  |  |  |
| 710.281 | Instrument Repairman | 27 |  |  |  |  |
| 710.281 | Radio and TV Repairman | 16 | V-042 | V-042(1),T-045(1) |  | 5 |
| 365.381 | Shoe Repairman | 18 |  |  |  |  |
| 741.887 | Sander | 1 |  |  |  |  |
| 804.281 | Sheet Metal Worker | 329 |  |  |  |  |
| 950.782 | Stationary Engineer | 5 |  |  |  |  |
| 601.280 | Tool and Die Maker | 7 | V-032 | V-032(1) |  |  |
| 841.781 | Wallpaperer, etc. | 107 |  |  |  |  |
| 816.884 | Welder, Flamecutter | 201 | V-050 | V-050(3),V-013(1) | V-050(1) | 8 |
|  | C. MANAGERS |  |  |  |  |  |
|  | Manager |  |  |  |  |  |
|  | Assistant Manager | 237 |  |  |  |  |
| 183.118 | Branch Manager | 218 |  |  |  |  |
| 168.168 | Credit Manager | 25 | T-018 |  |  |  |
|  | Department Manager |  |  |  |  |  |
| 164.118 | Advertising | 13 | T-018 |  |  |  |
| 219.388 | Budget | 40 | T-018 | T-018(1) |  | 4 |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
|  |  |  |  | INSTITUTIONAL OUTPUT |  |  |
| D.O.T. | OCCUPATIONS | 5-YEAR NEED | CURRICULUM INPUT | 1970-71 GRADUATES | 1970-71 "ELMS" | SENIORS' INTEREST |
|  | Miscellaneous | 10 |  |  |  |  |
| 166.118 | Personnel and Training | 133 |  |  |  |  |
| 165.068 | Public Relations | 1 |  |  |  |  |
| 162.158 | Purchasing | 25 | T-018 | T-050(1) |  | 1 |
| 162.118 | Sales and Distribution | 173 | T-018 |  |  |  |
| 189.118 | General Manager | 276 |  | V-003(2),V-013(1),V-022(1)<br>V-024(1),T-018(1),T-045(1) | T-018(4),T-045(1) | 14 |
| 981.138 | Maintenance Manager | 37 |  |  |  | 1 |
| 169.168 | Office Manager | 24 | T-018 |  |  |  |
|  | Plant Manager | 47 |  |  |  | 1 |
| 187.168 | Resident Manager | 9 |  |  |  |  |
| 186.288 | Mortgage and Loan Officer | 101 | T-018 |  |  |  |
| 197.168 | Superintendent | 57 |  |  |  |  |
|  | Supervisor | 157 |  | T-050(1) |  |  |
|  | Supervisor/Section Leader | 2 |  |  |  |  |
|  | D. TECHNICAL |  |  |  |  |  |
| 141.081 | Commercial Artist | 28 |  |  |  | 27 |
| 152.088 | Composer | 0 |  |  |  |  |
| 973.381 | Compositor | 27 | V-022 |  |  |  |
|  | Computer Programmer |  |  |  |  | 37 |
| 020.188 | Business | 38 | T-022 |  |  |  |
| 020.188 | Scientific and Technical | 8 |  |  |  |  |
|  | Custom Design Engineer | 9 |  |  |  |  |
| 142.051 | Decorator, Interior | 2 |  |  |  | 33 |
| 079.378 | Dental Assistant | 22 |  |  | T-030(1) | 18 |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
|  |  | 5-YEAR NEED | CURRICULUM INPUT | INSTITUTIONAL OUTPUT |  | SENIORS' INTEREST |
| D.O.T. | OCCUPATIONS |  |  | 1970-71 GRADUATES | 1970-71 "ELMS" |  |
| 142.051 | Designer, Interior | 2 |  |  |  | 2 |
|  | Draftsman |  |  |  |  |  |
| 001.281 | Building Trades | 31 |  | V-015(6),V-042(1) |  |  |
| 007.281 | Mechanical | 58 |  | V-017(4) |  |  |
| 160.288 | Estimator | 6 |  |  |  |  |
| 187.168 | Funeral Director, Embalmer | 68 |  |  |  |  |
| 079.368 | Inhalation Therapist | 93 |  |  |  |  |
|  | Mass Media - T.V., Radio, Newspaper, Advertising | 100 |  |  |  |  |
|  | Printing Trades, not elsewhere listed | 36 |  | V-022(2) | T-018(1),V-022(1) |  |
| 075.378 | Registered Nurse | 214 |  |  |  |  |
| 018.188 | Surveyor | 1 |  | V-015(1) |  |  |
|  | Technician |  |  |  |  |  |
| 001.281 | Architectural Technician | 17 | T-041 |  |  |  |
| 002.281 | Chemical Technician | 3 |  |  |  |  |
| 141.081 | Commercial Graphics Tech. | 26 | V-022 |  |  | 13 |
| 712.381 | Dental Technician | 24 |  |  |  |  |
| 003.181 | Electrical & Electronics Technician | 27 | T-045,V-042 |  |  |  |
| 003.181 | Electronics Technician | 21 | T-045 |  |  | 5 |
|  | Engineering Technician |  |  |  |  |  |
| 005.081 | Civil | 21 |  |  |  |  |
| 003.081 | Electrical | 21 |  |  |  |  |
| 003.281 | Environmental | 4 |  |  |  |  |
| 007.081 | Mechanical | 15 | T-050 | T-043(2),T-050(2) | T-050(1) |  |
| 012.081 | Safety | 6 |  |  |  |  |
| 976.381 | Film Technician | 35 | V-022 |  |  |  |
| 319. | Food Processing Tech. | 17 |  |  |  |  |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
| | | 5-YEAR | CURRICULUM | INSTITUTIONAL OUTPUT | | SENIORS' |
| D.O.T. | OCCUPATIONS | NEED | INPUT | 1970-71 GRADUATES | 1970-71 "ELMS" | INTEREST |
| 142. | Interior Design Tech. | 0 | | | | |
| | Marine Technician | 0 | | | | |
| 078.381 | Medical Technician | 8 | | | | 16 |
| 199.381 | Non-Destructive Tech. | 7 | | | | |
| 079.378 | Operating Room Technician | 7 | | | | |
| 040.081 | Ornamental Horticulture Technician | 42 | T-009 | T-009(1) | | 6 |
| 078.381 | Science (Lab) Technician | 16 | | V-038(1),V-017(1),T-050(1) | | 14 |
| | E. SALES | | | | | |
| 280.358 | Distributor & Dealer | 63 | T-018 | T-045(1),V-024(1),V-042(1), V-015(1) | T-018(2),T-001(1),T-045(1), T-009(1) | |
| 280.358 | Salesman | | | | | |
| 280.358 | Salesman - Automobile | 150 | | | | |
| 290.478 | Sales Clerks | 440 | | | | |
| 292.358 | Sales - Deliveryman | 180 | | | | |
| 250.258 | Salesman - Insurance | 300 | T-018 | | | 9 |
| | Salesman - Wholesale and Retail Trades | 1,543 | | | | |
| | F. CLERICAL | | | | | |
| 160.188 | Accountant | 18 | T-018 | T-018(4) | | 45 |
| 210.388 | Bookkeeper | 209 | T-018 | T-018(2) | | 18 |
| 211.468 | Cashier | 47 | T-030 | | T-018(1) | 2 |
| | Clerk | | | | | |
| 219.488 | Accounting Clerk | 311 | T-018,T-030 | | | |
| 219.388 | Administrative Clerk | 1 | T-018,T-030 | | | |
| 206.388 | File Clerk | 72 | T-030 | | | 12 |
| 209.388 | General Clerk | 437 | T-030,T-018 | | V-038(2) | 13 |
| 223.388 | Inventory Clerk | 17 | T-030,T-018 | | T-018(1) | |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
| D.O.T. | OCCUPATIONS | 5-YEAR NEED | CURRICULUM INPUT | INSTITUTIONAL OUTPUT |  | SENIORS' INTEREST |
|  |  |  |  | 1970-71 GRADUATES | 1970-71 "ELMS" |  |
| 215.488 | Payroll/Timekeeping Clerk | 53 | T-030,T-018 | T-018(2) |  |  |
| 205.268 | Personnel Clerk | 47 | T-030,T-018 |  |  |  |
| 221.388 | Production Clerk | 38 | T-030,T-018 |  |  |  |
| 222.387 | Shipping and Receiving Clerk | 138 | T-030,T-018 |  | T-009(1),T-018(2) |  |
| 223.387 | Stock Clerk | 177 | T-030,T-018 | T-009(1),V-003(1),T-043(1) |  |  |
|  | Traffic Rate Clerk | 16 | T-030,T-018 |  |  |  |
| 240.388 | Collector and Adjuster | 66 | T-018 |  |  |  |
| 132.088 | Copywriter | 10 |  |  |  |  |
|  | Data Processer | 0 | T-022 |  |  | 38 |
|  | Operator |  |  |  |  |  |
| 213.382 | Computer Operator | 56 |  |  |  | 8 |
| 213.582 | Key Punch Operator | 8 |  |  |  | 21 |
| 207. | Office Machine Operator | 35 | T-018,T-030 |  |  |  |
| 213.382 | Peripheral EDP Equip. Op. | 19 | T-022 |  |  |  |
| 235.862 | Switchboard Operator | 49 |  |  |  |  |
| 203.588 | Teletype Operator | 2 |  |  |  |  |
| 209.688 | Proofreader | 13 | T-030 |  |  |  |
| 237.368 | Receptionist | 538 | T-030 |  |  | 21 |
|  | Secretary |  |  |  |  |  |
| 201.368 | Executive & General Sec. | 1,312 | T-030 | T-030(5) | T-018(2),T-030(4) | 366 |
| 201.368 | Legal Secretary | 81 |  |  |  | 6 |
| 201.368 | Medical Secretary | 22 |  |  |  | 9 |
| 202.388 | Stenographer | 214 | T-030 |  |  | 5 |
| 212.368 | Teller | 151 | T-030 |  |  |  |
| 919.368 | Ticket Agent | 1 |  |  |  |  |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
|  |  | 5-YEAR NEED | CURRICULUM INPUT | INSTITUTIONAL OUTPUT |  | SENIORS' INTEREST |
| D.O.T. | OCCUPATIONS |  |  | 1970-71 GRADUATES | 1970-71 "ELMS" |  |
|  | G. PRODUCTION |  |  |  |  |  |
| 905.883 | Driver | 377 |  | V-015(1) | T-018(2),T-009(1) |  |
|  | Foreman, Non-Working | 153 |  |  | T-009(1) |  |

# Appendix BB

This appendix is a consolidated listing of occupations and the job openings that have been identified for the five year period of June, 1972, to June, 1977. Curriculum information is included when it can be identified with the occupations. This appendix includes a part of the information in Appendix AA. The occupations are listed under the seven general groupings used in the form for the survey of business and industry.

## Job Openings 1972-1977

| | Occupations | 1972-1977 Job Needs | Curriculum | |
|---|---|---|---|---|
| A. | Service | | | |
| | Cosmetician and Beautician | 166 | V-009 | (Not Offered) |
| | Counselor, Employment | 191 | None | |
| | Fire Service Worker | 36 | T-036 | (Courses Only) |
| | Nurse Practical | 209 | V-038 | |
| | Nursing Assistant | 131 | None | |
| | Police Occupations | 34 | T-064 | (Courses Only) |
| | Foreman, Non-working | 42 | None | |
| B. | Maintenance, Construction and Repair | | | |
| | Brickmason | 143 | V-070 | (Not Offered) |
| | Concrete Finisher | 86 | V-070 | (Not Offered) |
| | Carpenter | 964 | V-007 | |
| | Electrician | 179 | V-018 | |
| | Foreman, Non-working | 104 | None | |
| | Machinist | 131 | V-032 | |
| | Maintenance, General Utility | 68 | None | |
| | Mechanic, Heating and Air Conditioning | 261 | V-024 | |
| | Mechanic, Maintenance | 167 | None | |
| | Mechanic, Office Machine | 36 | None | |
| | Mechanic, Small Motor | 43 | None | |
| | Mechanic, Auto Repair Appraiser | 17 | V-003 | |
| | Mechanic, Automotive | 227 | V-003 | |
| | Mechanic, Transmission Specialist | 67 | V-003 | |
| | Mechanic, Auto Body Repair | 46 | V-001 | |
| | Mechanic, Diesel | 113 | V-013 | |
| | Painter | 121 | None | |
| | Plumber and Pipefitter | 243 | V-037 | |
| | Repairman, Instrument | 27 | None | |
| | Repairman, Radio and TV | 16 | V-042 | |
| | Repairman, Shoe | 18 | None | |
| | Sheet Metal Worker | 329 | None | |
| | Wallpaperer | 107 | | |
| | Welder, Flamecutter | 201 | V-050 | |
| C. | Managers | | | |
| | Manager, Assistant, Branch and Credit | 480 | T-018 | |
| | Manager, Department, Budget, Personnel, Sales, etc. | 395 | T-018 | |

| Occupations | 1972-1977 Job Needs | Curriculum |
|---|---|---|
| Manager, Maintenance, Office, Plant, Resident | 117 | T-018 |
| Officer, Mortgage and Loan | 101 | T-018 |
| Superintendent | 57 | None |
| Supervisor | 157 | None |
| D. Technical | | |
| Commercial Artist | 28 | None |
| Computer Programmer, Business | 38 | T-022 |
| Computer Programmer, Scientific | 8 | None |
| Dental Assistant | 22 | None |
| Draftsman, Building Trades | 31 | V-015 |
| Draftsman, Mechanical | 58 | V-017 |
| Funeral Director, Embalmer | 68 | None |
| Inhalation Therapist | 93 | T-091 |
| Mass Media | 100 | None |
| Ornamental Horticulture | 42 | T-009 |
| Printing Trades Craftsman, Compositor, Commercial Graphics Technician | 89 | V-022 |
| Registered Nurse | 214 | T-059 |
| Technician, Architectural | 17 | T-041 |
| Technician, Chemical | 3 | None |
| Technician, Dental | 24 | None |
| Technician, Electrical and Electronics | 48 | T-045 |
| Technician, Civil Engineering | 21 | None |
| Technician, Electrical Engineering | 21 | None |
| Technician, Environmental Engineering | 4 | None |
| Technician, Mechanical Engineering | 15 | T-050 |
| Technician, Safety Engineering | 6 | None |
| Technician, Film | 35 | V-022 |
| Technician, Food Processing | 17 | None |
| Technician, Medical | 8 | None |
| Technician, Non-destructive | 7 | T-061 |
| Technician, Nuclear Medicine | 0 | T-104 |
| Technician, Operating Room | 7 | None |
| Technician, Science (Lab) | 16 | None |
| E. Sales | | |
| Distributor and Dealer | 63 | T-018 |
| Salesman, Wholesale (Traveling) | 1813 | T-018 |
| F. Clerical | | |
| Accountant, Bookkeeper, Cashier | 274 | T-018 |
| Clerk, Accounting, File, Payroll, Personnel, Shipping, Stock, etc. | 869 | T-018 |

| Occupations | 1972-1977 Job Needs | Curriculum |
|---|---|---|
| Clerk, General | 437 | T-033 |
| Collector and Adjuster | 66 | T-018 |
| Operator, Computer | 56 | None |
| Operator, Key Punch | 8 | None |
| Operator, Office Machine | 35 | T-030 |
| Operator, Peripheral EDP Equipment | 19 | T-022 |
| Receptionist | 538 | T-030 |
| Secretary, Executive and General | 1312 | T-030 |
| Secretary, Legal | 81 | None |
| Secretary, Medical | 22 | None |
| Stenographer | 214 | T-030 |
| Teller | 151 | T-030 |

## G. Production

| | | |
|---|---|---|
| Driver | 377 | None |
| Foreman, Non-working | 153 | None |

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